

Service Service Service



Service Manual



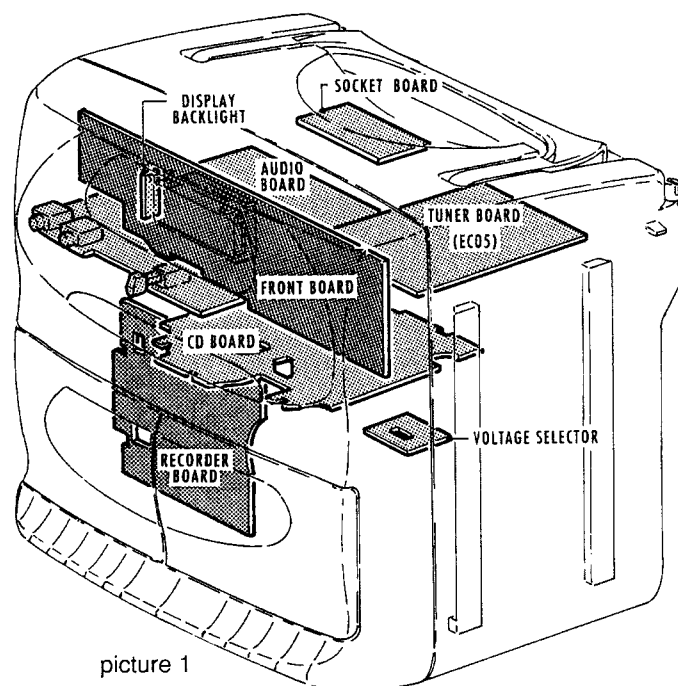
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**CLASS 1
LASER PRODUCT**



PHILIPS



picture 1

TECHNICAL SPECIFICATION

General:

Mains voltage	: 220V-230V / 50Hz for /00 /14 230V-240V / 50Hz for /05 /10 110V-127V / 220V-240V /50Hz switchable for /01/11/13 120V / 60Hz for /07/17 100V / 50Hz for /06
Power consumption	: ≤ 35W at maximum output power ≤ 5W in stand by
Battery	: 9V (6xR20)
Battery lifetime	: 12 hours typ.

Amplifier:

Power stage protection	: temperature and shortcircuit	
	AZ2805	AZ2808
Output power mains	: 2 x 2W _{rms} -1dB at 4Ω D=10%	2 x 3.2W _{rms} -1dB at 8Ω D=10%
battery	: 2 x 2W _{rms} -1dB at 4Ω D=10%	2 x 3.9W _{rms} -1dB at 8Ω D=10%
Headphone	: 3,5mm stereo jack, ≥ 20mW at 32Ω (= 0,8V at 32Ω) D=10%	
Frequency response	: 30Hz - 16kHz (typ. at volume set to -20dB, CD mode 0dB signal level ⇒use SBC429)	

Digital Sound Control *DSC*

	100Hz	10kHz
Flat :	-2dB \pm 3dB	0dB \pm 3dB
Pop :	+7dB \pm 3dB	+8dB \pm 3dB
Jazz :	+3dB \pm 3dB	+5dB \pm 3dB
DBB :	+7dB \pm 3dB	+4dB \pm 3dB

CD: To be measured on phone socket with 100k Ω load.

Frequency response	: 30 - 16.000 Hz -3dB
Signal/Noise ratio	: ≥ 80 dB
Distortion	: $\leq 0.3\%$ at 1 kHz
Channel difference	: ≤ 3 dB at 1 kHz
Channel crosstalk	: 35dB max.
De emphasis	: 0 or 15/50 μ s switched automatically by subcode on the disc

Laser

Output power	: 500μW
Wave length	: 780 ±20nm

Tuner:

	FM	MW	LW ¹⁾	SW ¹⁾
Tuning range	87,5 - 108 MHz (65.81 - 74/87.5 - 108 MHz for /14) (76 - 90 MHz + Ch1 95.75MHz, Ch2 95.75 MHz, Ch3 107.75 MHz for /06)	531 - 1602 kHz (530 - 1700 kHz for /01/17)	153- 279 kHz	3.9 - 12.1MHz
IF	10,7 MHz ± 30 kHz	450kHz ± 1 kHz	450 kHz ± 1 kHz	450 kHz ± 1 kHz
Sensitivity Mono: 26dB S/N, m=30% -3 dB limiting point	≤ 5 µV (2µV typ.) ≤ 5 µV (2µV typ.)	≤ 4mV/m (3,5mV/m typ.)	≤ 6mV/m (4,5mV/m typ.)	≤ 210µV (60µV typ.)
Frequency grid	50 kHz (30/50 kHz for /14) (100 kHz for /06/17) (50/100 kHz* for /01/11)	9 kHz (10 kHz for /17) (9/10 kHz* for /01/11)	3 kHz	5kHz
Distortion	≤ 3% (≤ 1% typ.) RF=1mV, Δf=75kHz	≤ 5% (3% typ.) RF=50mV/m, m=80%	≤ 5% (3% typ.) RF=50mV/m, m=80%	≤ 5% (3% typ.) RF=5mV, m=80%
Image rejection ratio	≥ 25dB (40dB typ.)	≥ 28dB	≥ 30dB	≥ 16/6dB
Channel separation at 1kHz	≥ 22dB (27dB typ.)			

* can be selected via software initialization

1) not in all versions

Recorder: To be measured on phone socket with 100kΩ load.

Tape speed	: 4,76cm/s ±3%
Wow & Flutter	: ≤ 0,5% weighted
Winding speed	: 110s for C60 cassette
Erase / Bias system	: permanent magnetic erase head / AC 73 ±1.5kHz
Distortion at 250 nWb/m	: ≤ 7%
Signal/Noise ratio (FF weighted)	: ≥ 40dB
(A - weighted)	: ≥ 43dB
Channel difference at PB	: ≤ 3dB
Channel difference overall	: ≤ 5dB
Channel separation	: ≥ 15dB at 1kHz
Track separation	: ≥ 55dB at 1kHz

note: set is not prepared to play or record IEC II Chrome cassettes!

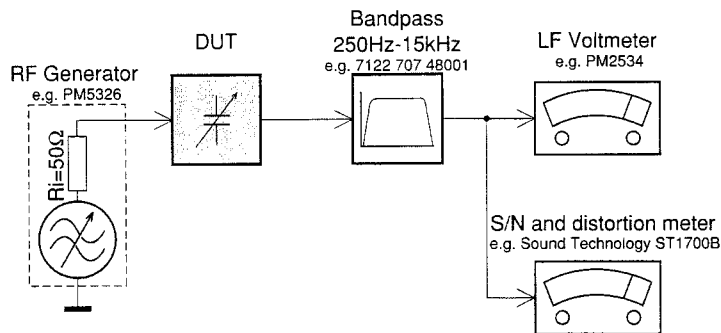
Frequency response IEC I	
PB	: 125Hz - 8000Hz (within 8dB)
overall	: 250Hz - 6300Hz (within 8dB)

Remote Control:**RC5 commands RC0206****RC5 commands RC0170**

Remote Control key	System Code CD	Tuner	Command Code	System Code	Command Code
PLAY/PAUSE	20		53	20	53
STOP	20		54	20	54
NEXT (PRESET UP)	20		32	20	32
PREVIOUS (PRESET DOWN)	20		33	20	33
VOLUME UP	16	16	16	16	16
VOLUME DOWN	16	16	17	16	17
OPEN/CLOSE	20	20	45	20	45
CD mode	20		63		
TUNER mode		17	63		
SHUFFLE	20		28		
1	20	17	01		
2	20	17	02		
3	20	17	03		
4	20	17	04		
5	20	17	05		
6	20	17	06		
7	20	17	07		
8	20	17	08		
9	20	17	09		
0	20	17	00		
DISC UP	not used				

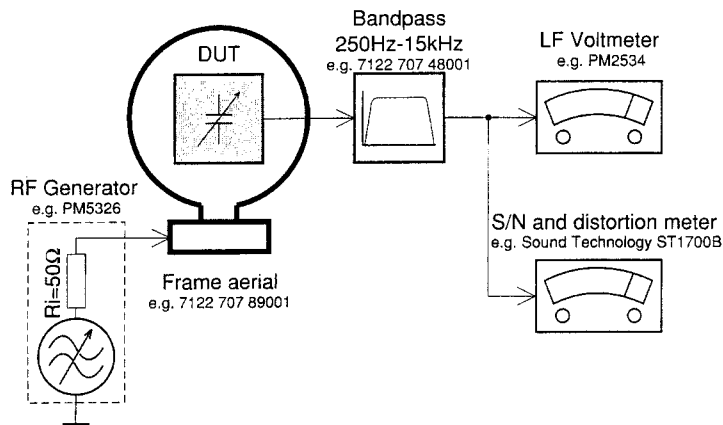
MEASUREMENT SETUP

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilotone (19kHz, 38kHz).

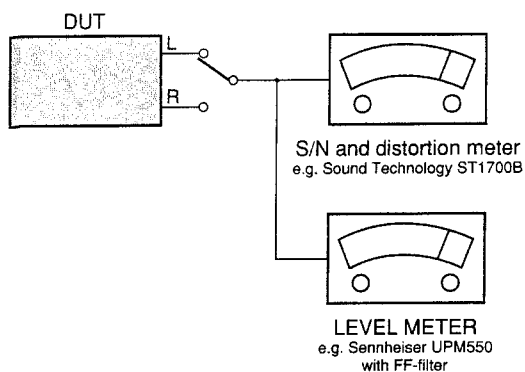
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

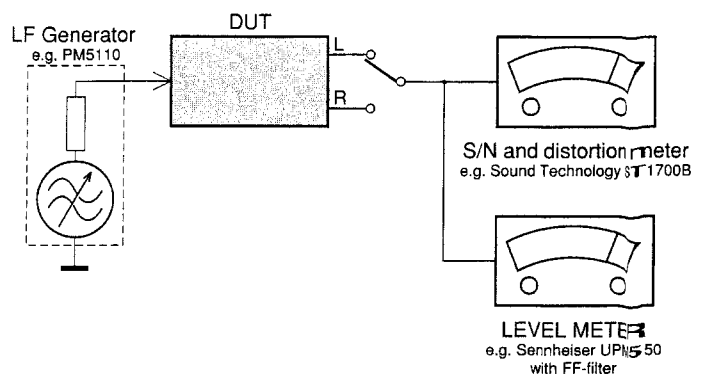
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)

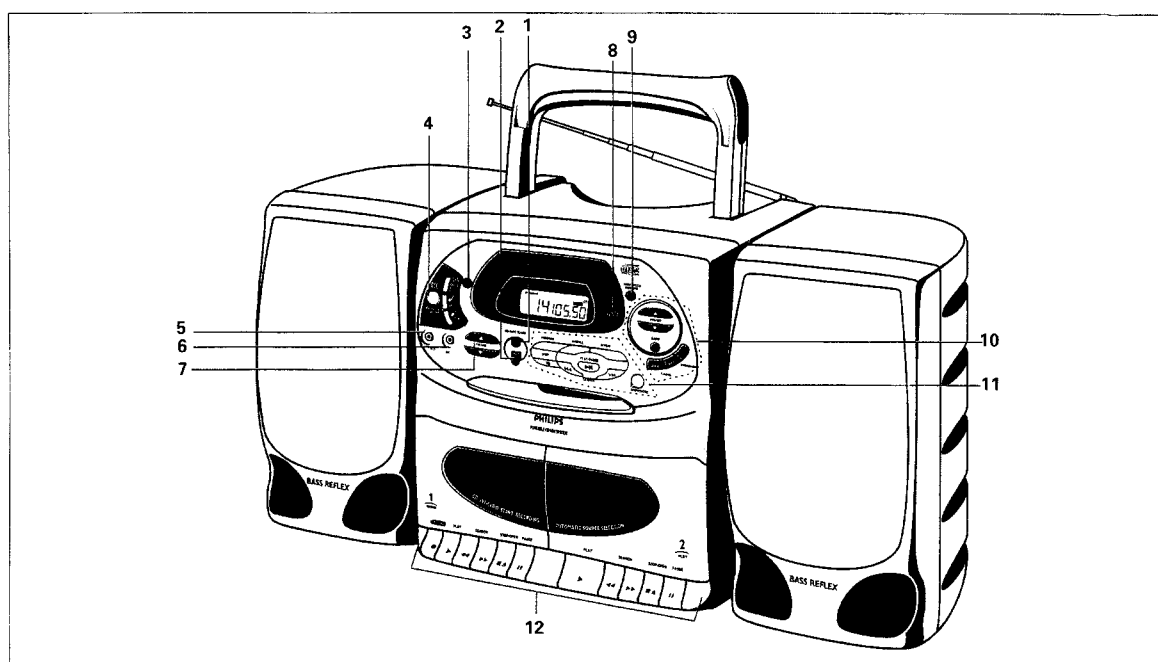


RECORDER

Use Universal Test Cassette Fe SBC420 4822 397 30071



CONTROLS



English

BASIC FUNCTIONS:

- ① CD•TAPE•TUNER...to select the sound source
- ② POWER.....to turn the set on and off
- ③ INCREDIBLE SOUND...to create a phenomenal surround sound effect (AZ 2808 only)
- ④ DSC**DIGITAL SOUND CONTROL**: to increase the bass level or to enhance the type of music you are listening to DBB-JAZZ-POP
- ⑤3.5 mm headphone socket
Note: Inserting the plug will disconnect the loudspeakers.
- ⑥ MIC.....3.5 mm microphone socket
- ⑦ VOLUME ▲ ▼.....to adjust the volume level
- ⑧ REMOTE SENSOR...sensor for the infrared remote control
- ⑨ HIGH SPEED DUBBING...Press to copy at high speed

⑩ RADIO:

PROGRAM.....to program preset stations
 TUNING ◀ ▶.....to tune to radio stations
 BANDto select the wave band (FW·MW·LW AM SW)
 PRESET ▲ ▼.....to select a preset station

⑪ CD PLAYER:

OPEN-CLOSEto open/close the CD tray
 PLAY-PAUSE ▶◻.....to start and to interrupt CD play
 STOP ◻to stop CD play and to erase a program
 SEARCH ◀ ▶.....to skip and to search forwards and backwards
 SHUFFLE.....to play in random order
 PROGRAM.....to program track numbers and to review the program
 REPEATto repeat one track or the entire CD or the program

⑫ CASSETTE RECORDER:

RECORD ●to start recording (deck 1 only)
 PLAY ▶to start playback
 SEARCH ◀ ▶.....to wind or rewind the tape
 STOP-OPEN ◻ ▲.....to stop the tape and to open the cassette holder
 PAUSE ◻◻.....to interrupt the recording or playback

CONTROLS

POWER SUPPLY

LOUDSPEAKERS

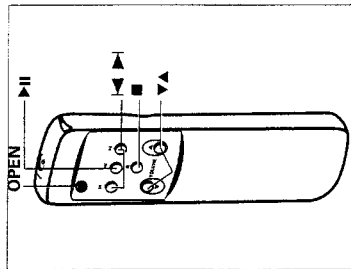
BASIC FUNCTIONS

English

Remote control

Remote control AZ 2805:

- OPEN to open/close the CD tray
- ▶II to start and to interrupt CD play
- ◀II to select the beginning of the current/previous or a subsequent track
- TUNER Mode: to select a preset station
- to stop CD play
- VOLUME ▼ ▲ to increase or decrease the volume level



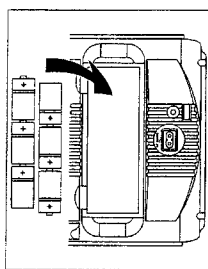
Batteries

Set (R20, UM1 or D-cells):

- Open the battery holder of the set and insert six batteries, type R20, UM1 or D-cells (preferably alkaline).

Remote control (R06, UM3 or AA-cells):

- Open the battery holder of the remote control and insert two batteries, type R06, UM3 or AA-cells (preferably alkaline).
- Remove the batteries if they are empty or the set is not to be used for a long time.



All kinds of batteries contain chemical substances therefore they should be disposed of properly.

Mains

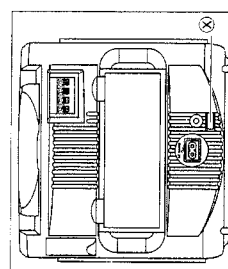
- Check if the mains voltage as shown on the type plate corresponds to your local mains voltage. If it does not, consult your dealer or service organisation. **The type plate is located at the base of the set.**

If the set is equipped with a VOLTAGE selector (X), set this selector to the local mains voltage.

- Connect the mains cable to the AC MAINS inlet and the wall socket. The AC mains supply is switched on. **The mains cable is inside the battery compartment.**

The battery supply is switched off when the set is connected to the mains. To change over to battery supply, pull out the plug from the UNIT'S AC MAINS SOCKET.

To disconnect the set from the mains completely, withdraw the mains plug from the wall socket.



English

Removable loudspeakers

Connecting the loudspeakers

Connect the right speaker to the R socket and the left loudspeaker to the L socket.

Note: Loudspeakers other than supplied can be used.

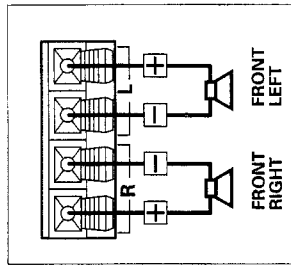
They have to be 4 Ohms for type AZ 2805 and 8 Ohms for type AZ 2808.

Taking off the loudspeakers

Keep the lever (on the back of the loudspeakers) pressed and slide the loudspeaker upwards.

Attaching the loudspeakers

Slide the loudspeakers from above in the sleeves on the sides of the set cabinet. The speakers will click into position.



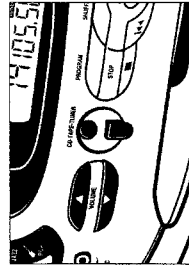
Switching on and off/standby

Push the POWER button.

→ The display lights up (only if the set is connected to the AC mains supply).

The set is switched off when the POWER button is released.

When the set is switched off the last source selected will be remembered, as well as the sound settings, the tuner presets and the volume level.



In order to switch off the power supply, remove the mains plug.

Note: If the set runs on batteries, always be sure to set the POWER button in position OFF after use. This will avoid unnecessary mains consumption.

Brief excerpt of the INSTRUCTION FOR USE

BASIC FUNCTIONS

REMOTE CONTROL

RADIO

Adjusting volume and sound

Adjust the volume using the controls **VOLUME** \blacktriangledown \blacktriangle .
 → Display indication: Volume level from 0 to 32.

Adjust the sound to your taste by pressing the button **DSC** several times.

→ A light indicates either **DBB-JAZZ-POP**.

Create a phenomenal surround sound effect by pressing **INCREDIBLE SOUND** (AZ 2808 only)

→ The **INCREDIBLE SOUND** button lights up.

The effect of incredible sound may vary with different types of music and can be improved by leaving the speakers attached to the set.

The bass frequencies can also be emphasised if you place the set against a wall or on a bookshelf. (Do not cover any vents and leave sufficient room around the unit for ventilation.)

Remote control

CDto select CD functions

TUNERto select tuner functions

Digits 0-9to key in a track number

TUNER: to key in a preset station

▶||to start and to interrupt CD playback

SHUFFLEto play a CD in random order

◀▶to select the beginning of the

current/previous or a subsequent track

TUNER: to select a radio preset station

■to stop CD playback

OPENto open/close the CD tray

VOLUME \blacktriangledown \blacktriangle to decrease or increase the volume level

Note: The **DISC UP** button on the remote control has no corresponding function on this set.

Notes: – Always select the desired sound source first and then press the required function key.

– Numbers consisting of two figures must be keyed in within 2 seconds.

English

Tuning to radio stations

1 Select the tuner by pressing the **CD** \bullet **TAPE** \bullet **TUNER** button several times until **TUNER** appears on the display.

2 Select the wave band by using the **BAND** selector.
 → Display indication: the selected waveband

3 Press **TUNING** \blacktriangleleft or \blacktriangleright for approx. one second and then release the button.

→ The radio automatically tunes to a station with sufficient strength. Display indication during automatic tuning: **SEARCH**

4 Repeat this procedure until you find a desired station.

To tune to a weak transmitter briefly press **TUNING** \blacktriangleleft or \blacktriangleright as often as necessary for optimum reception, or until the correct frequency is indicated in the display.

Improving the RADIO reception

• For **FM** and **SW**, pull out the telescopic antenna. To improve the signal, incline and turn the antenna. Reduce its length if the signal is too strong (very close to a transmitter).

• For **AM**, **MW** and **LW**, direct the built-in antenna by turning the whole set. The telescopic antenna is not needed.

Switchable tuning grid (not all versions)

In North and South America the frequency step between adjacent channels in the AM band is 10 kHz. In the rest of the world this step is 9 kHz. Usually this frequency step has been preset in the factory of your area. (/01 versions only)

In some versions the frequency step can be changed:

• Keep the **BAND** selector button pressed for more than 5 seconds.

→ The display shows either **10** **kHz** or **9** **kHz**.

Programming radio stations (29 preset stations)

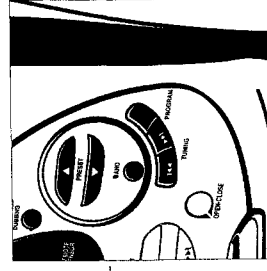
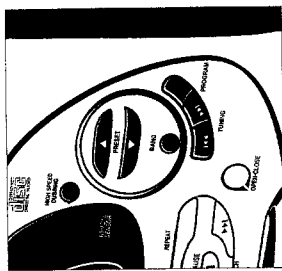
You can store up to 29 radio stations in the memory. When tuning to a preset station, the preset number (1 to 29) is indicated in the display.

1 Select the tuner by pressing the **CD** \bullet **TAPE** \bullet **TUNER** button several times until **TUNER** appears on the display.

2 Tune to a desired station with **TUNING** \blacktriangleleft or \blacktriangleright , as described earlier.

→ If the frequency is already stored in the memory, the preset number will be displayed.

English



Brief excerpt of the INSTRUCTION FOR USE


RADIO

- 3 Press PROGRAM to enter the programming mode.
 - During programming, **PROGRAM** flashes on the display.
- 4 Press PRESET ▲ or ▼ to allocate a number from 1 to 29 to the preset station.
- 5 Press PROGRAM to confirm the setting.

Tuning to preset stations

- Press PRESET ▲ or ▼ until the desired preset number appears on the display.

Playing a CD

- 1 Select the CD player by pressing the CD • TAPE • TUNER button several times until  appears on the display.
- 2 Open the tray by pressing the OPEN-CLOSE button.
- 3 Insert an audio CD (printed side up) and close the tray by pushing it gently or pressing the OPEN-CLOSE button again.

- The CD player starts and scans the contents list of the CD.
- Display indication: the total number of tracks and the total playing time. After that the CD player stops.

- 4 Press the PLAY-PAUSE ►|| button to start CD playback.

- Display indication: the current track number and the elapsed time of the current track.

- 5 Press the STOP ■ button to stop CD playback.

- Display indication: the total number of tracks and the total playing time.

- 6 You can interrupt CD playback by pressing PLAY-PAUSE ►||. Continue CD playback by pressing the button again.

- Display indication: the time of the current position flashes.

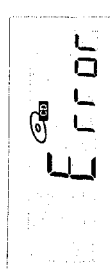
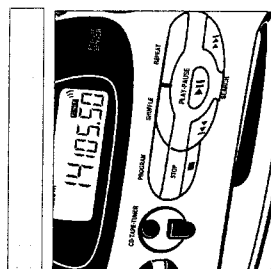
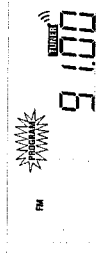
Notes: CD playback will also stop if:

- you open the tray;
- you push the POWER button or
- the end of the CD is reached.

When you make a mistake in operating the CD player or the CD player cannot read the CD.

- the display indicates **Error** (see TROUBLESHOOTING).

CD PLAYER



CD PLAYER

Search backwards ◀◀ and ▶▶ forwards

Selecting another track

Briefly press the SEARCH ◀◀ or ▶▶ button once/several times to skip to the beginning of the current/previous or subsequent track(s).

- During play: CD playback continues automatically with the selected track.

- In stop position: press PLAY-PAUSE ►|| to start CD playback.
 - Display indication: the selected track number.

Searching for a passage during CD playback

- 1 Hold down the SEARCH ◀◀ or ▶▶ button to find a particular passage in forwards or backwards direction.
 - CD playback continues at low volume.

- 2 Release the button when you have reached the desired passage.

Note: In the SHUFFLE and REPEAT-1 mode and when playing a program, searching is only possible within the particular track.

Different playing modes: SHUFFLE / REPEAT

SHUFFLE – playing in random order

- 1 Press SHUFFLE before or during CD playback.
 - All the tracks of the CD (or program if available) will now be played in random order.

- 2 To return to normal CD playback, press SHUFFLE again.

REPEAT – Repeating the entire CD or one track of the CD

- 1 Before or during CD playback, press repeated REPEAT to cause the display showing the different repeating modes.

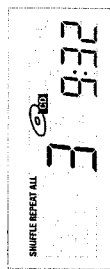
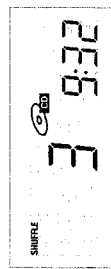
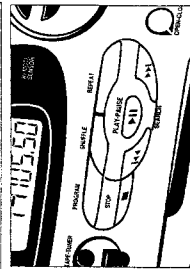
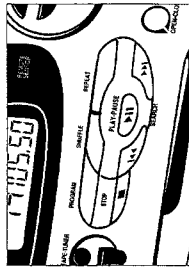
- REPEAT: the current track is played repeatedly.

- REPEAT ALL: the entire CD or program is played repeatedly.

- 2 To return to normal CD play press REPEAT until the display indication disappears.

Note: You can activate the different playing modes at the same time, e.g. you can repeatedly play the entire CD or program in random order (shuffle repeat all).

English



Brief excerpt of the INSTRUCTION FOR USE

CD PLAYER

Programming track numbers

You may select a number of tracks and store these in the memory in the desired sequence. You may store any track more than once. At most, 20 tracks can be stored in the memory.

- 1 Select the desired track with SEARCH ◀◀ or ▶▶.
- 2 As soon as the desired track is displayed, press the PROGRAM button to store the track in the memory.
→ On the display **PROGRAM** appears. The number of the stored track, **P**, and the total number of stored tracks is shown.
- 3 Select and store in this way all desired tracks.
- 4 You can review your settings by pressing the PROGRAM button for more than 2 seconds.
→ The display shows all stored track numbers in sequence.

Notes: — When you try to store more than 20 tracks the display shows **FULL**.
— When you press **PROGRAM** and there is no track selected the display shows **SELECT**.

Playing the program

If you have selected the tracks in the stop position, press **PLAY-PAUSE ▶||**.

If you have selected the tracks during CD playback, press first **STOP ■** and then press **PLAY-PAUSE ▶||**.

Erasing the program from the stop position

From the stop position, press **STOP ■**.

→ **SELECT** lights up briefly, **PROGRAM** disappears and your program is erased.

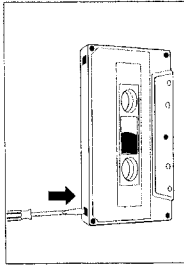
Notes: The program will also be erased if you:

- interrupt the power supply,
- open the tray,
- press the **POWER** button.

CASSETTE RECORDER

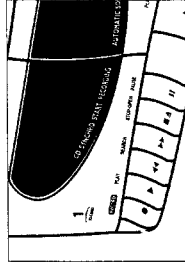
Protecting tapes from accidental erasure

- Keep the cassette side to be safeguarded in front of you and break out the left tab. Now, recording on this side is no longer possible.
- To record again on this side of the cassette, cover the aperture with a piece of adhesive tape.



Recording from the CD player – CD synchro start

- 1 Select the CD by pressing the **CD • TAPE • TUNER** button several times until **CD** appears on the display.
- 2 Insert a CD and if desired, program track numbers.
- 3 Press **STOP OPEN ■ ▲** to open the cassette compartment.
- 4 Insert a blank cassette with the full reel on the left.
- 5 Press **RECORD ●** to start recording.
→ Playing of the CD or program starts automatically. It is not necessary to start the CD player separately.
- 6 For brief interruptions, press **PAUSE ||**. To resume recording, press the **PAUSE ||** key once more.
- 7 To stop recording, press **STOP OPEN ■ ▲**.



Notes: The recording can be started from different positions:
— if the CD player is in the pause position, recording will start from this very position (use **SEARCH ◀◀** or **▶▶**);
— if the CD player is in the stop position, recording will start from the beginning of the CD or program.

Recording from the radio or with the microphone

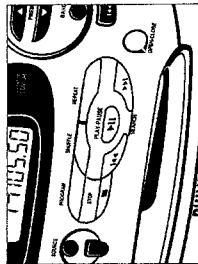
- 1 (Selecting and preparing the source)

RADIO: Select the radio by pressing the **CD • TAPE • TUNER** button several times until **TUNER** appears on the display.

MICROPHONE: Select the tape by pressing the **CD • TAPE • TUNER** button several times until **TAPE** appears on the display.

Connect a microphone with a 3.5 mm plug to the MIC socket and set the **VOLUME** control to zero (monitoring during microphone recording is not possible).

English



Brief excerpt of the INSTRUCTION FOR USE

BASIC FUNCTIONS

Switching on and off/standby

Push the POWER button.

- The display lights up. If the set runs from batteries the display will not be back-lit.

The set is switched off when the POWER button is released.

In order to switch off the power supply, remove the mains plug.

Note: If you run the set from batteries, always be sure to switch the set off after use. This will avoid unnecessary power consumption.

Adjusting volume and sound

Adjust the volume using the control VOLUME MIN-MAX.

Adjust the volume using the controls VOLUME ▼ ▲.

- Display indication: Volume level from 0 to 32.

Adjust the sound to suit your taste by pressing the button DSC several times (DBB is Dynamic Bass Boost).

- A light indicates either DBB-JAZZ-POP.

Create a phenomenal surround sound effect by pressing INCREDIBLE SURROUND.

- The INCREDIBLE SURROUND button lights up.

Do not cover any vents and leave sufficient room around the unit for ventilation.

Note: The effect of INCREDIBLE SURROUND may vary with different types of music.

Remote control

CD to select CD functions

TUNER to select tuner functions

Digits 0-9 CD: to key in a track number

▶▶ TUNER: to key in a preset station

SHUFFLE to start and to interrupt CD play

◀◀ to play a CD in random order

..... CD: to select the beginning of the

current/previous or a subsequent track

TUNER: to select a radio preset station

■ to stop CD play

OPEN to open/close the CD tray

VOLUME ▼ ▲ to decrease or increase the volume level

Notes: – Always select the desired sound source first and then press the required function key.

– Numbers consisting of two figures must be keyed in within 2 seconds.

– DISC UP has no function with this set.

English

CASSETTE RECORDER

- 2 Press STOP-OPEN ■ ▲ to open the cassette compartment.

- 3 Insert a unprotected blank cassette with the full reel on the left hand side.

- 4 Press RECORD ● to start recording.

- 5 For brief interruptions press PAUSE ■■ To resume recording press the PAUSE ■■ key once more.

- 6 To stop recording, press STOP-OPEN ■ ▲.

Note: When recording from the radio or a CD, you can connect a microphone and mix the sounds. Otherwise, be sure there is no microphone connected that could disturb your recording.

Dubbing - copying from deck 2 to deck 1

When dubbing, it is recommended to use new batteries or to connect the set to the AC mains supply.

- 1 Press the HIGH SPEED DUBBING button for high speed copying. Do not switch this selector during dubbing.

- 2 Insert a recorded cassette into deck 2 and a cassette which is suited for recording into deck 1.

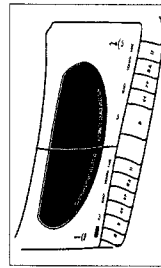
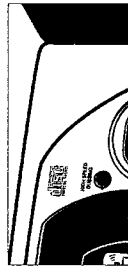
- 3 Press PAUSE ■■ followed by RECORD ● on deck 1.

- 4 To start dubbing, press PLAY ▶ on deck 2.

- 5 To stop dubbing, press both STOP-OPEN buttons ■ ▲.

Press PAUSE ■■ on deck 1 if you wish to omit undesired passages. The playback in deck 2 will continue. To restart dubbing, press PAUSE ■■ again.

By pressing PAUSE ■■ in deck 2 during dubbing, a blank part will be recorded in deck 1.

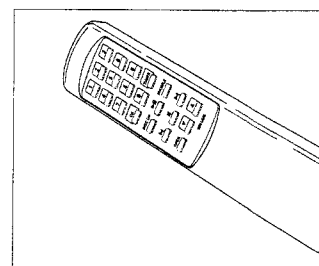
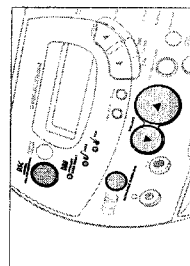
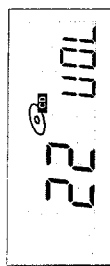
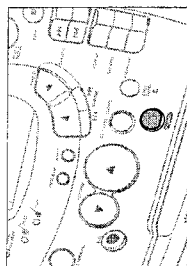


To avoid overheating of the set a safety circuit has been built in. Therefore your set may switch off under extreme conditions. If this happens, release the power button and let the set cool down before reusing it.

Environmental information

All redundant packing material has been omitted. We have done our utmost to make the packaging easy separable into three mono materials: cardboard (box), expandable polystyrene (buffer) and polyethylene (bags, protective foam sheet).

Your set consists of material which can be recycled if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packing materials, exhausted batteries and old equipment.



TROUBLESHOOTING

WARNING

Under no circumstances should you try to repair the set yourself, as this will invalidate the guarantee.

If a fault occurs, first check the points listed below before taking the set for repair. If you are unable to remedy a problem by following these hints, consult your dealer or service center.

Problem	Possible cause	Solution
No sound / no power	<ul style="list-style-type: none"> - VOLUME is not adjusted - Headphones are connected - Speakers are not or wrongly connected - Mains cable is not securely connected - Batteries are exhausted - Batteries are incorrectly inserted - Changing over from mains to battery supply without removing the plug 	<ul style="list-style-type: none"> - Adjust the VOLUME - Disconnect headphones - Check speaker connection - Connect the mains cable properly - Replace batteries - Insert the batteries correctly - Pull out the power plug from the unit's AC MAINS inlet
No reaction to operation of any keys	<ul style="list-style-type: none"> - Electrostatic discharge 	<ul style="list-style-type: none"> - Disconnect the set from power supply reconnect it after a few seconds
Poor radio reception	<ul style="list-style-type: none"> - Weak radio antenna signal - Interference caused by the vicinity of electrical equipment like TVs, video recorders, computers, engines, etc. 	<ul style="list-style-type: none"> - Aim the antenna for optimum reception: <ul style="list-style-type: none"> – FM/SW: incline and rotate telescopic antenna – AM/MW/LW: rotate the entire set - Keep the radio away from electrical equipment
no disc or Error indication	<ul style="list-style-type: none"> - The CD is badly scratched or dirty - No CD is inserted - The CD is inserted upside down - The laser lens is steamed up 	<ul style="list-style-type: none"> - Replace or clean the CD, see maintenance - Insert a CD - Insert a CD with label upwards - Wait until the lens has cleared of
The CD skips tracks	<ul style="list-style-type: none"> - The CD is damaged or dirty - shuffle or program is active 	<ul style="list-style-type: none"> - Replace or clean the CD - Switch off shuffle or program play
Poor cassette sound quality	<ul style="list-style-type: none"> - Dust and dirt on the heads, capstan or pressure roller - Use of not suited cassette types (METAL or CHROME) 	<ul style="list-style-type: none"> - Clean the heads, capstan and pressure roller, see maintenance - Only use NORMAL cassettes for recording
Recording does not work	<ul style="list-style-type: none"> - Cassette tab(s) may be broken out 	<ul style="list-style-type: none"> - Apply a piece of adhesive tape over the missing tab space
Remote control does not function properly	<ul style="list-style-type: none"> - Batteries are incorrectly inserted - Batteries are exhausted - Distance to the set is too large 	<ul style="list-style-type: none"> - Insert the batteries correctly - Replace batteries - Reduce the distance

WARNINGS & SAFETY

(GB) WARNING

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools at this potential.

ESD



(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op dit zelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfilez le bracelet sert d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unvorsichtige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, daß sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.
Safety components are marked by the symbol ▲

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.
Les composants de sécurité sont marqués ▲

SAFETY



(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.
Sicherheitsbauteile sind durch das Symbol ▲ markiert.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.
De Veiligheidsonderdelen zijn aangeduid met het symbool ▲

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.
Componenti di sicurezza sono marcati con ▲

(GB)

DANGER: Invisible laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.

**CLASS 1
LASER PRODUCT**

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spårren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

(FIN) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen !

(GB)

After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
The leakage current must not exceed 0.5mA.

(F)

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

DISMANTLING INSTRUCTIONS

Dismantling of the Cassette Doors

RIGHT DOOR

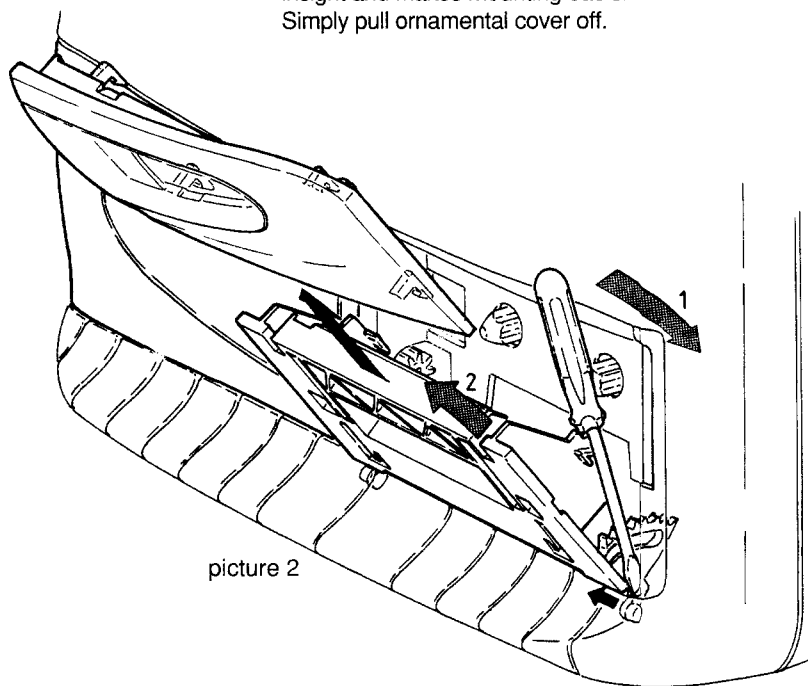
- Open cassette door.
- Release right catch by pressing it inwards with a screwdriver as shown in picture 2 (step 1).
- Pull door on right side up as shown in picture 2 (step 2).
- Left catch will now be released automatically.

LEFT DOOR

- Open cassette door.
- Release left catch by pressing it inwards with a screwdriver as shown in picture 2 (step 1) for the right door.
- Pull door on left side up.
- Right catch will now be released automatically.

HINT

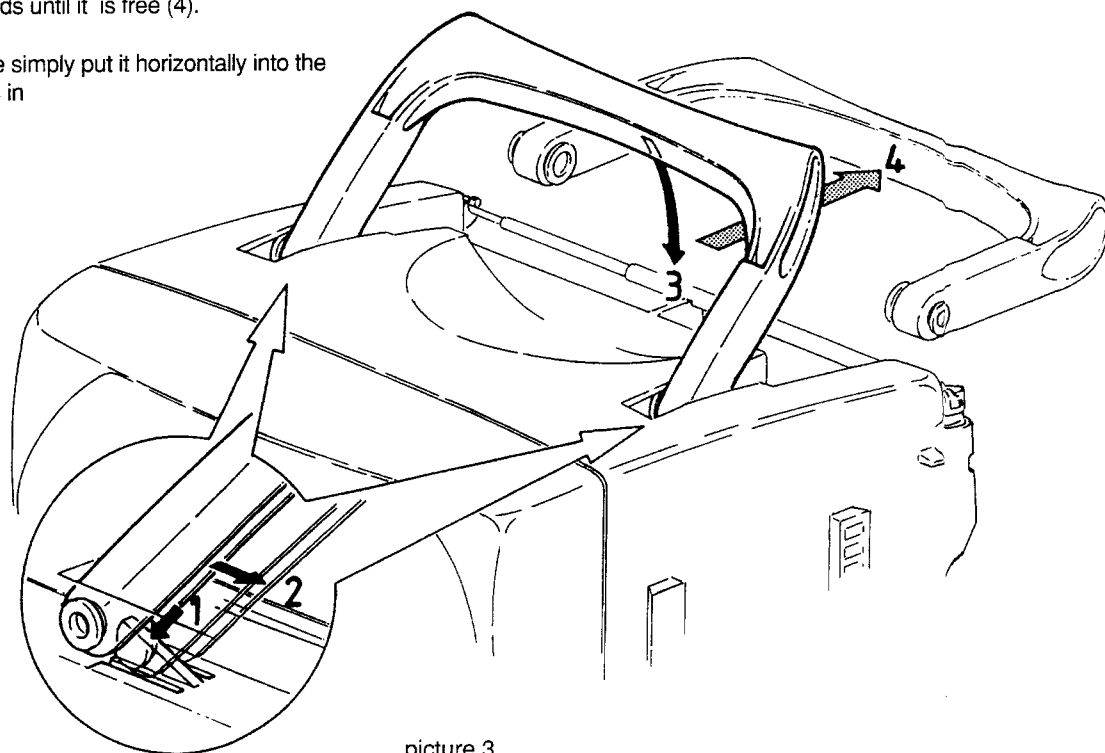
- Removing the ornamental cover gives a better insight and makes mounting easier. Simply pull ornamental cover off.



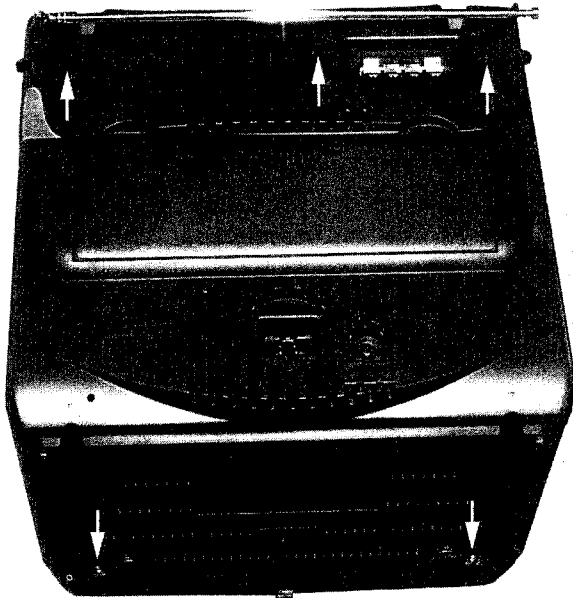
Dismantling of the Carrying Handle

- Turn handle upright first.
- Press catch ribs a little bit downwards (1) and pull handle backwards until catch ribs are hold in a slightly lower position (2).
- Now turn handle completely down (3) ⇒ catch ribs will now automatically be bent downwards and release the handle.
- Pull handle backwards until it is free (4).

To mount the handle simply put it horizontally into the cabinet until it snaps in



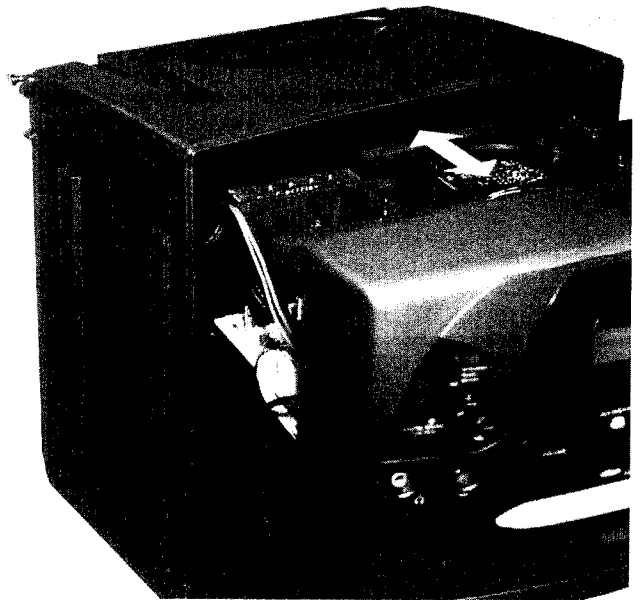
DISMANTLING INSTRUCTIONS



picture 4

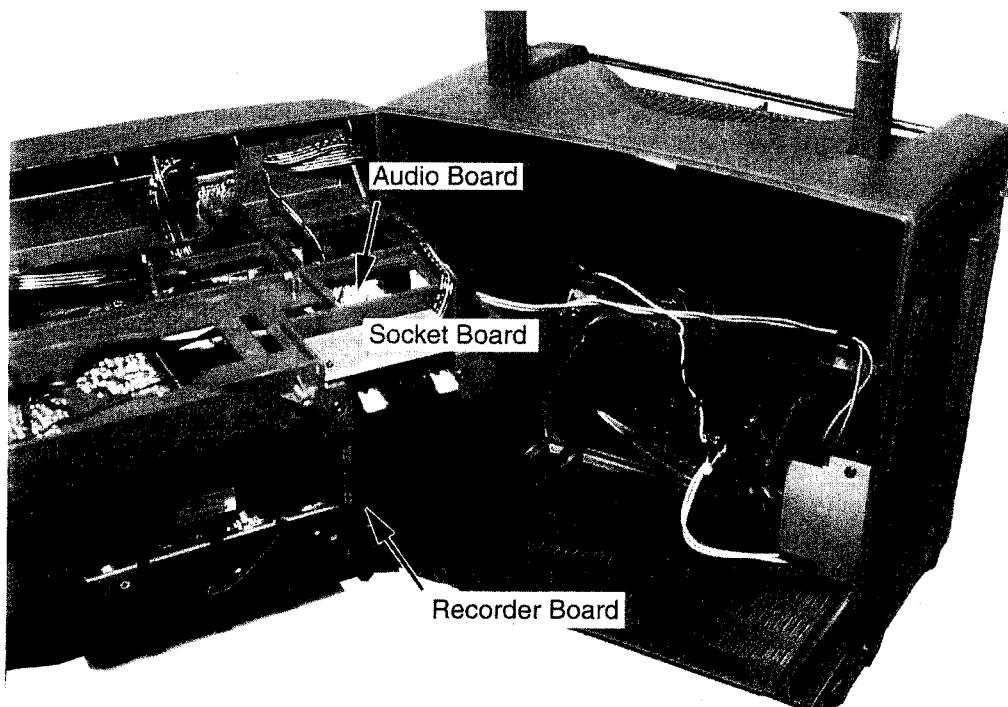
Separation Front - Rear Cabinet

- loosen 5 screws as shown in picture 4.
- split cabinet parts as shown in picture 5.



picture 5

Now the set is in service position for repairs on componentside of Audio Board and Recorder Module



picture 6

SERVICE HINTS

SERVICE TOOLS

TORX T10 screwdriver with shaftlength 150mm	4822 395 50423
TORX screwdriver set SBC 163	4822 295 50145
Audio signal disc SBC 429	4822 397 30184
Playability test disc SBC444	4822 397 30245
Test disc 5 (disc without errors) +	
Test disc 5A (disc with dropout errors, black spots and fingerprints)	
SBC 426/426A	4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30dB level without "pause") ...	4822 397 30155
Universal test cassette Fe SBC 420	4822 397 30071

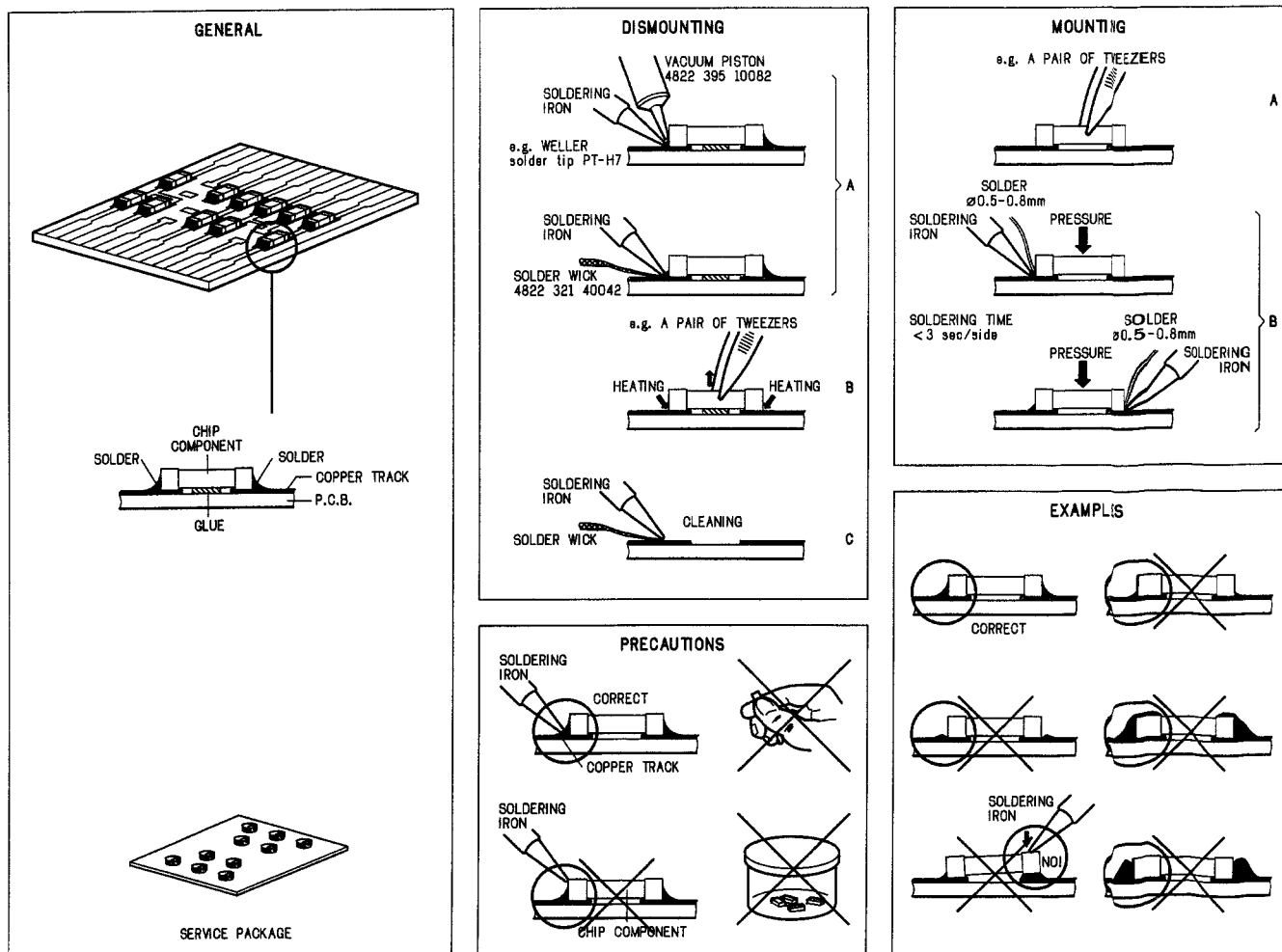
CIRCUIT DESCRIPTION

For circuit description of the CD part we refer to

CIRCUIT DESCRIPTION **CD93 PART I** (4822 725 24041)
chapter 2.2 : TDA1301(DSIC2: Digital Servo IC)

CIRCUIT DESCRIPTION **New key components of CD 94 program** (4822 725 25233)
chapter 3 : CD6 decoder SAA7345

HANDLING CHIP COMPONENTS

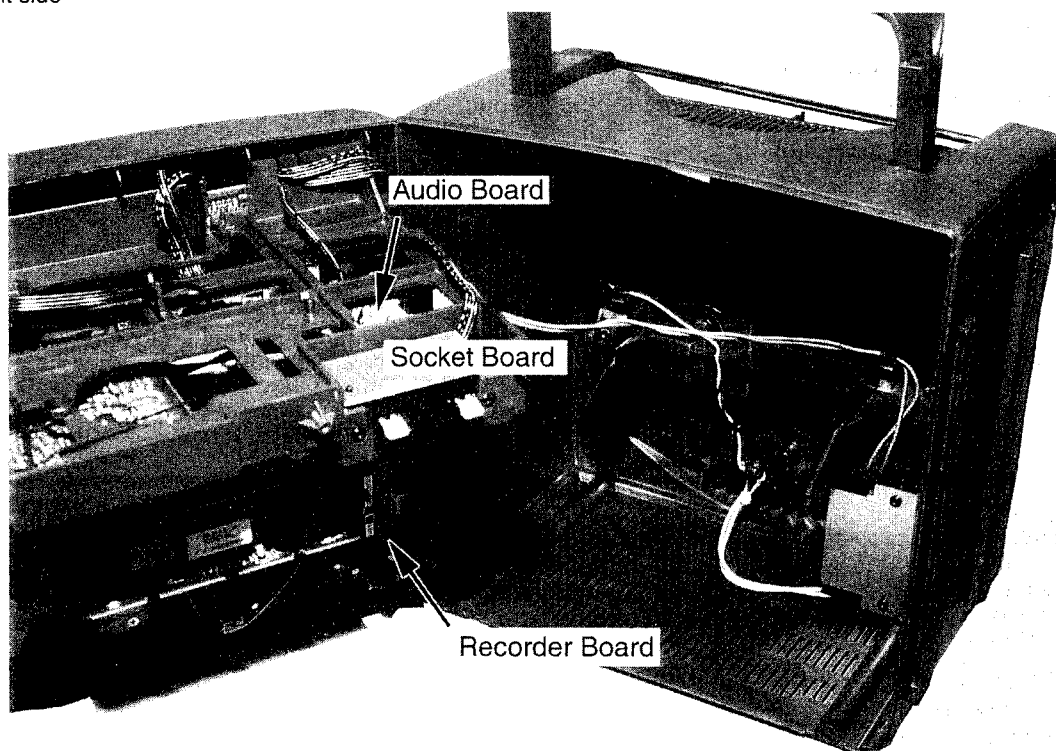


SERVICE HINTS

REPAIR POSITIONS

Repairs on

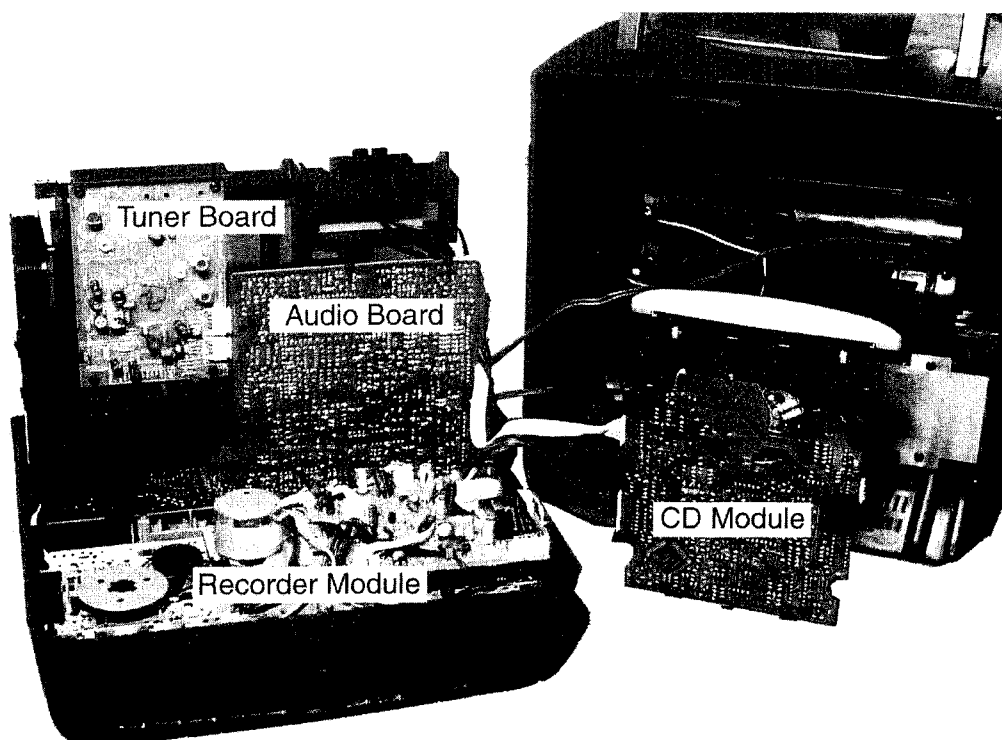
- Audio Board component side
- Recorder Module



picture 6

Turn Front cabinet face down for repairs on

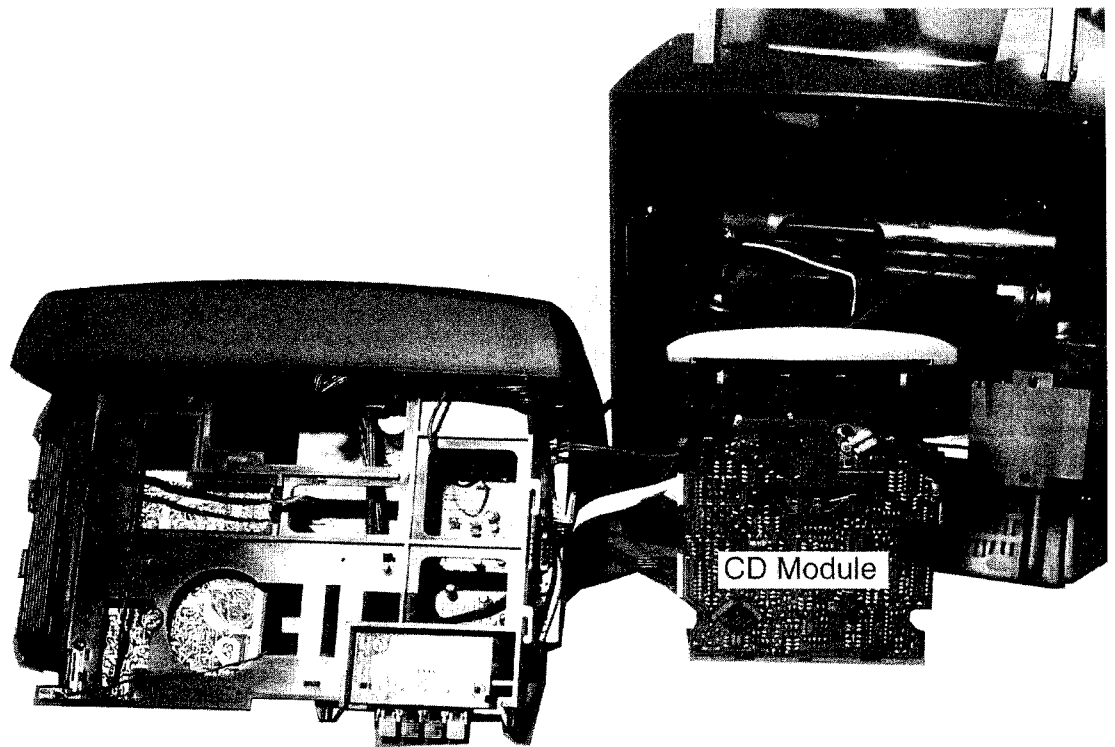
- Tuner board, component side
- Recorder Module
- Audio board, copper side (remove CD Module by loosening 2 screws).



picture 7

SERVICE HINTS**REPAIR POSITIONS****Repairs on CD Module**

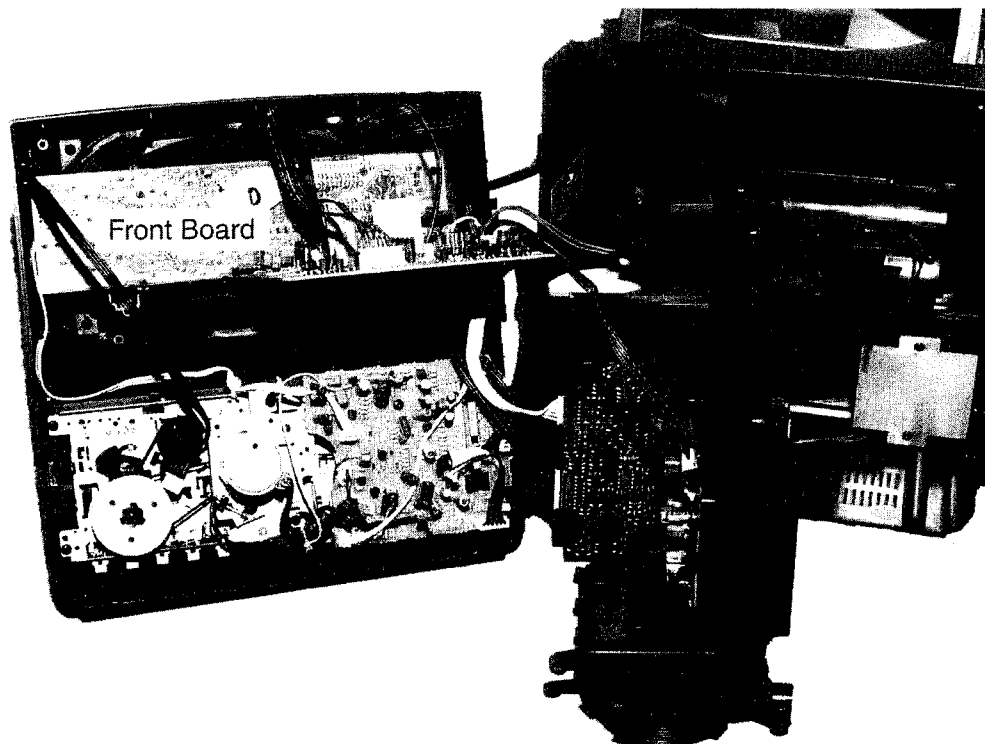
Positioning of Front cabinet as shown in picture 8 enables access to the control buttons.



picture 8

Repairs on Front Board

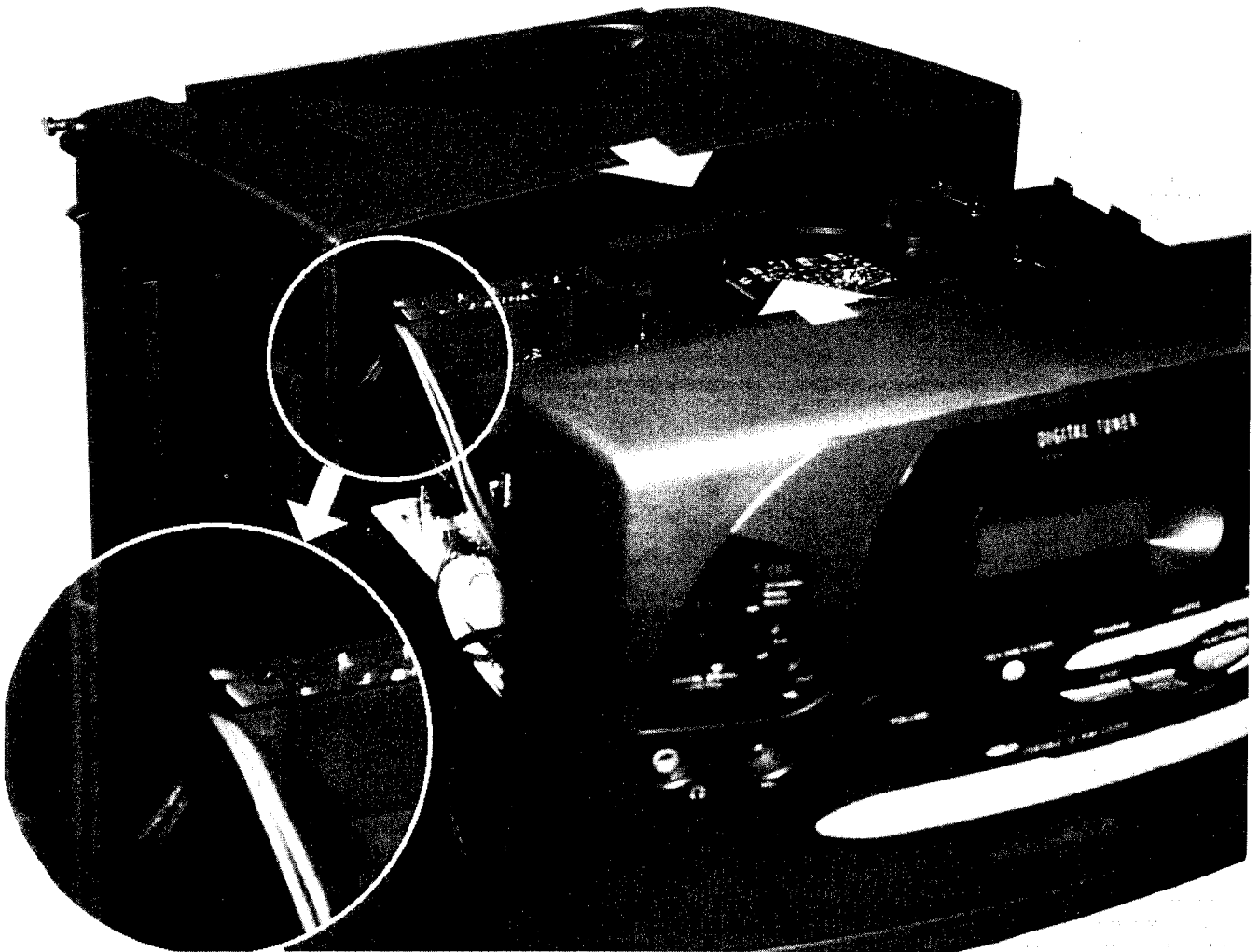
(remove support frame first)



picture 9

Assembling the set after repairs

Pay attention on wire routing as shown in picture 10.



picture 10

To enter Service
Testprogramm hold
PLAY & STOP buttons
depressed while switching
the set on.

- Slide servo, Radial servo, Focus servo, Disc motor
Tray motor and Laser are switched off.
Mute is switched on via decoder IC.
5 stands for Service mode



fig. 1

Additional Information on the display in *SERVO* and *FOCUS* test



└ indicate key numbers acc. table 1

└ indicates status of inner switch: switch closed (slide inside)

/ switch open

— indicates status of tray switch: switch closed (tray closed or open)

/ switch open (tray between end positions)

KEY CODES

KEY	KEY Remote Control	KEY CODE	KEY	KEY Remote Control	KEY CODE
Repeat		00		0	20
Volume up	Volume up	01		1	21
Program CD		03		2	22
Mode		04		3	23
Volume down	Volume down	05		4	24
DSC		06		5	25
Open	Open	09		6	26
HS-dubbing		10		7	27
Previous	Previous	11		8	28
Stop	Stop	12		9	29
Play/Pause	Play/Pause	13	Band		30
Next	Next	14	Program Tuner		31
Shuffle	Shuffle	15	Tuning down		32
Incredible sound		17	Tuning up		33
	Tuner	18	Preset down		34
	CD	19	Preset up		35

table 1

1) In sets with 30kHz grid on FM band it may occur that the tuned frequency is indicated wrong on the display because of tolerances of the discriminator filter.
For that reason the testsoftware is prepared for an *automatic IF-offset correction*.

Note: This test functions only with the East European tuner version /14/34.

The test was executed on every set in the production line.
In case the discriminator filter has to be exchanged
the *automatic IF-offset correction* should also be
executed after repair.

To execute the *automatic IF-offset correction*:

- * feed a strong 87.5MHz signal to the antenna
- * press the PROGRAM button

The μP starts now several times the *search* mode.

If the transmitter was found at 87.5MHz the stop-frequency sent by the radio IC is compared with the nominal frequency. When the same difference is found twice the value will be stored as offset. The actual used offset is shown on the display (-3, -2, -1, 0, 1, 2, 3).

2) Preset frequencies of table 2 can be used as in normal tuner mode. If field strength is high enough "PROGRAM" flag will light up. Preset frequencies stored by the customer are not influenced.

3) T

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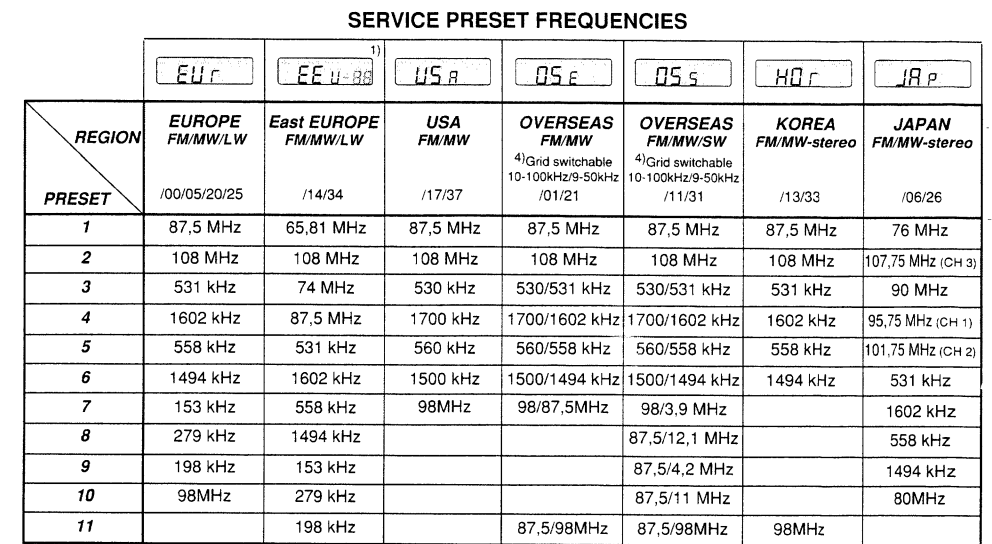


table 2


4) To toggle frequency grid press **BAND** button for more than 5s in normal tuner mode (**not** in service testmode).

Display will show either 9 Gr id or 10 Gr id for 2 s.



fig. 1

- indicate key numbers acc. table 1

indicates status of inner switch:  switch closed (slide inside)

/ switch open

- indicates status of tray switch: switch closed (tray closed or open)

/ switch open (tray between end positions)

KEY	KEY Remote Control	KEY CODE	KEY	KEY Remote Control	KEY CODE
Repeat		00		0	20
Volume up	Volume up	01		1	21
Program CD		03		2	22
Mode		04		3	23
Volume down	Volume down	05		4	24
DSC		06		5	25
Open	Open	09		6	26
HS-dubbing		10		7	27
Previous	Previous	11		8	28
Stop	Stop	12		9	29
Play/Pause	Play/Pause	13	Band		30
Next	Next	14	Program Tuner		31
Shuffle	Shuffle	15	Tuning down		32
Incredible sound		17	Tuning up		33
	Tuner	18	Preset down		34
	CD	19	Preset up		35

table 1

luced.
st →
testmode,
k quality

of the disc
of the slide.

¹⁾ In sets with 30kHz grid on FM band it may occur that the tuned frequency is indicated wrong on the display because of tolerances of the discriminator filter.
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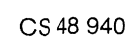
2) Preset frequencies of table 2 can be used as in normal tuner mode. If field strength is high enough "PROGRAM" flag will light up. Preset frequencies stored by the customer are not influenced.

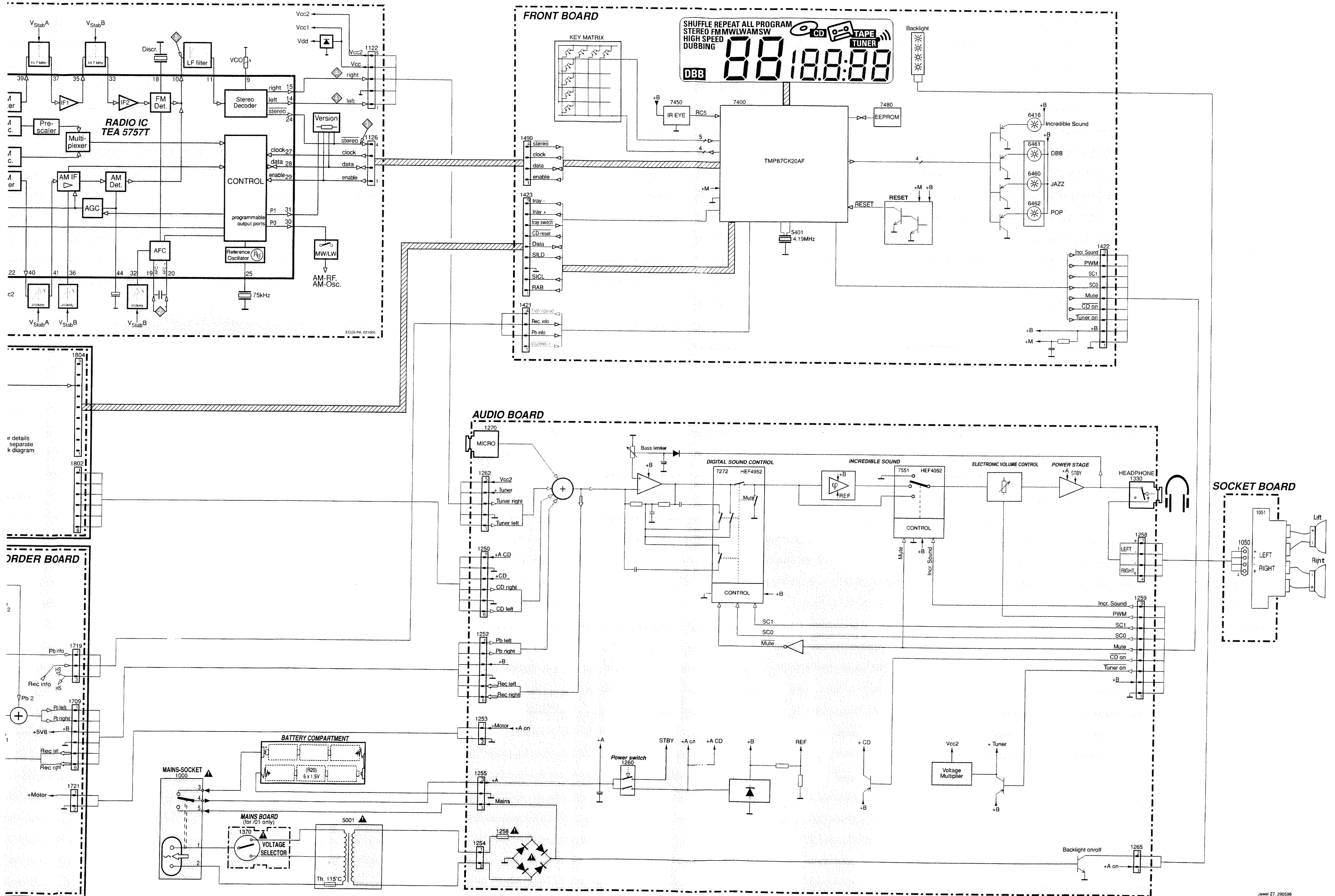
3) The *CD PLAY TEST* is intended to be used for continuously playing a disc in order to detect intermittent or not reproducible failures. The error code indicates where the failure can be found.

Error type: W = Warning → set continues operation, message remains on the display until next error occurs or any key is pressed.
(If the set does not function after 10 retries Warning changes to Fatal Error)

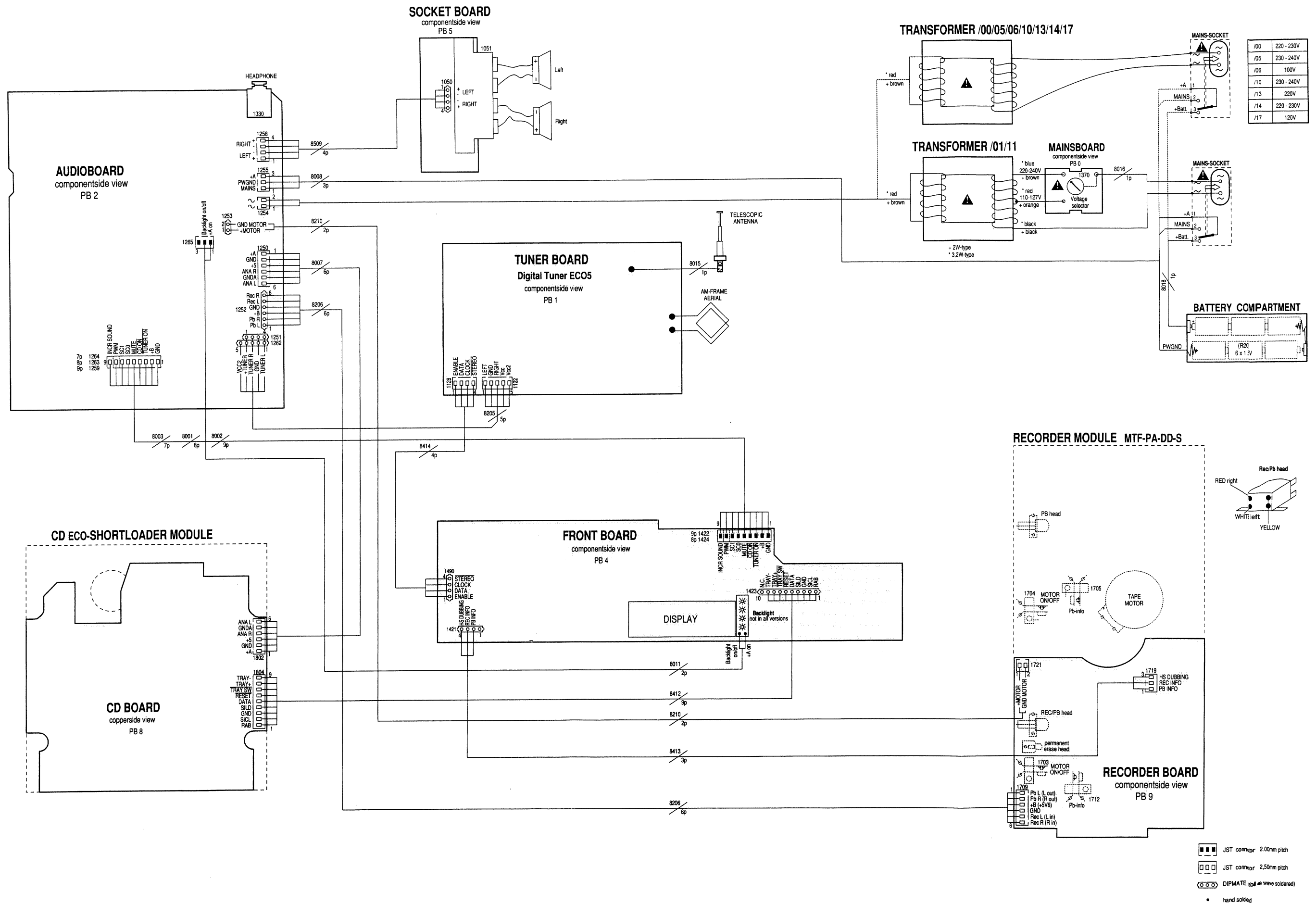
F = Fatal Error → set stops operation, message remains on the display.
(The set can only be operated again via a *reset*)

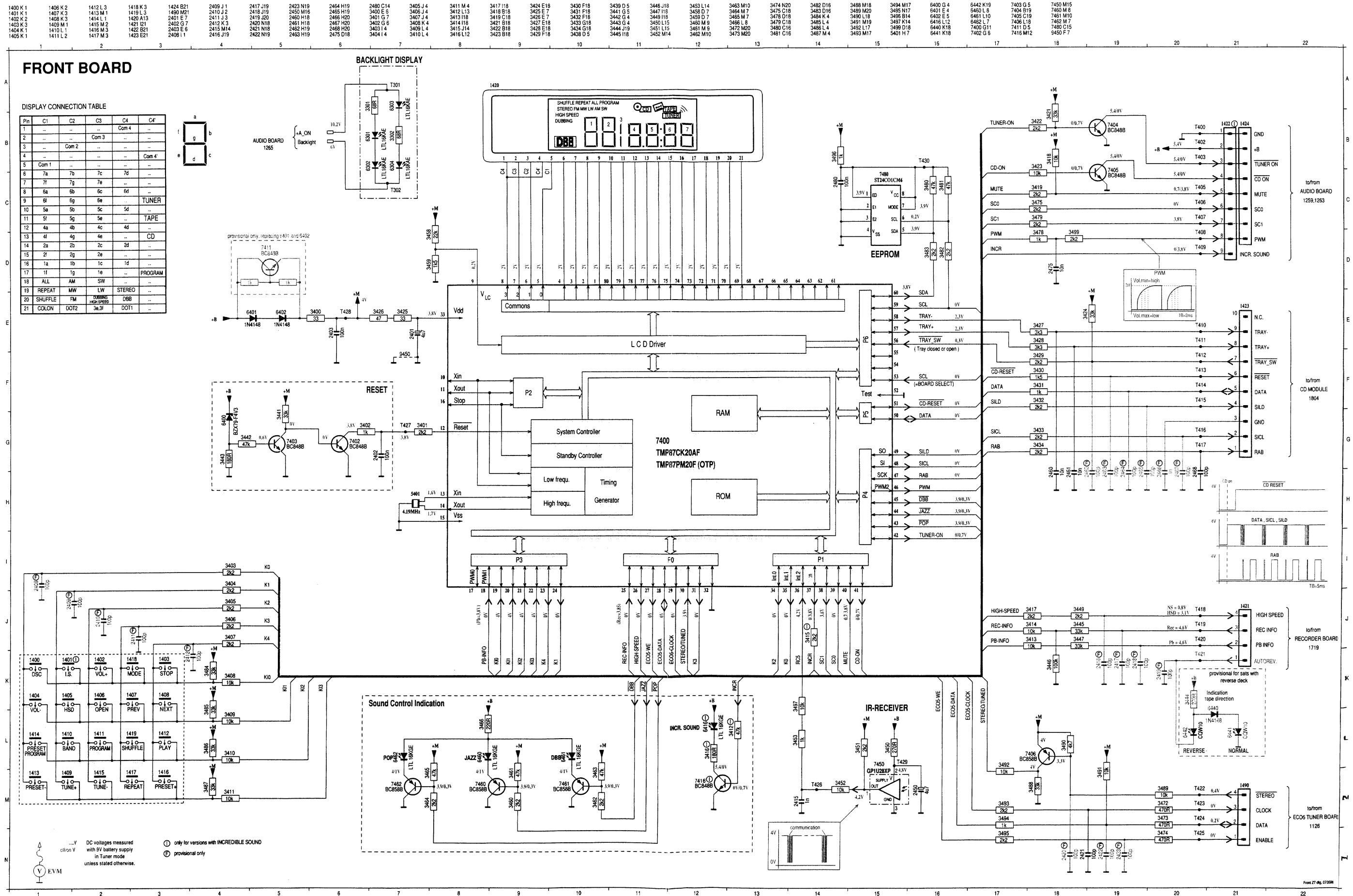
West JEWEL digital 190496



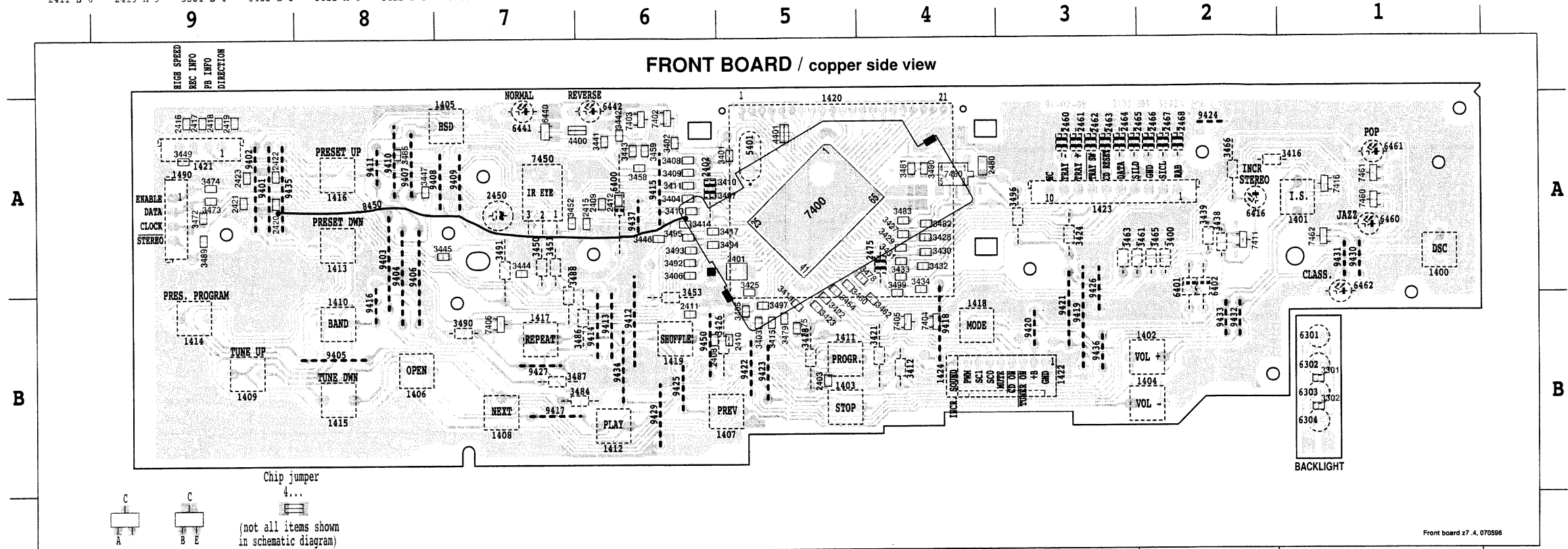


SOCKET BOARD
componentside view
PB 5



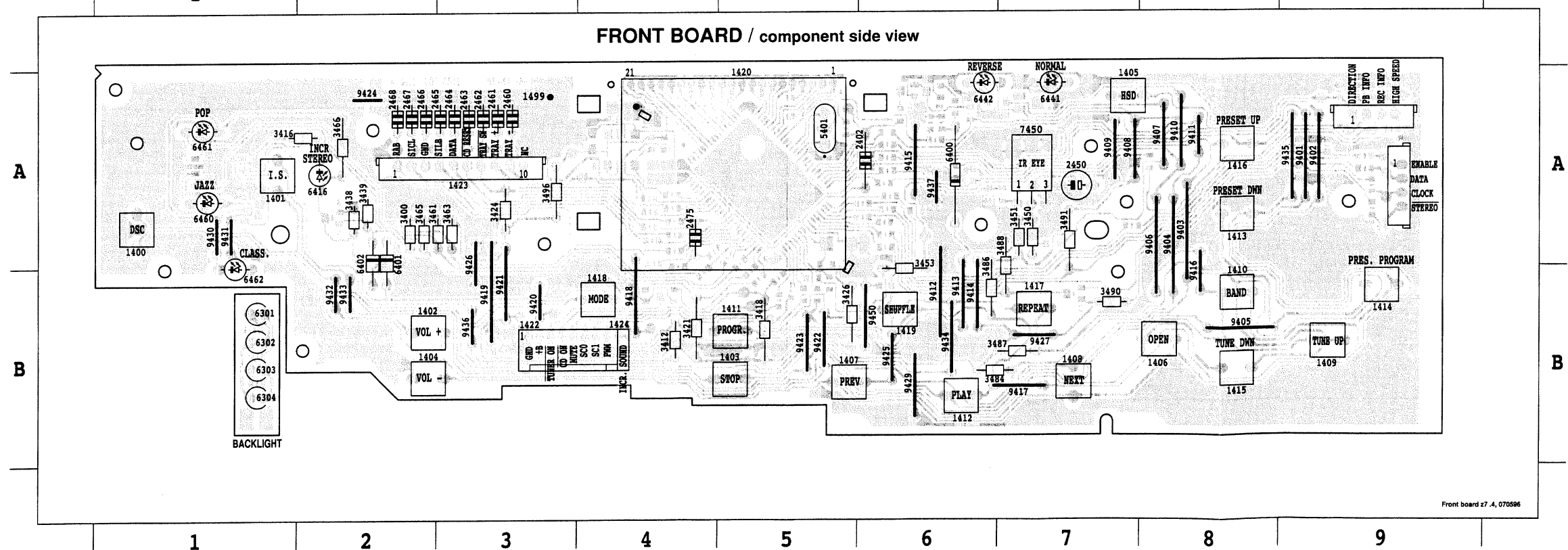


2401 A 5	2412 A 6	2420 A 9	3302 B 1	3406 A 6	3413 A 6	3423 B 5	3431 A 4	3443 A 6	3452 A 7	3472 A 9	3480 A 4	3492 A 6	4400 A 6	7404 B 4	7461 A 1
2403 B 5	2415 A 6	2421 A 9	3401 A 5	3407 A 6	3414 A 6	3425 A 5	3432 A 4	3444 A 7	3458 A 6	3473 A 9	3481 A 4	3493 A 6	4401 A 5	7405 B 4	7462 A 1
2408 B 6	2416 A 9	2422 A 9	3402 A 6	3408 A 6	3415 B 5	3427 A 4	3433 A 4	3445 A 7	3459 A 6	3474 A 9	3482 A 4	3494 A 6	6440 A 7	7406 B 7	7480 A 4
2409 A 6	2417 A 9	2423 A 9	3403 B 5	3409 A 6	3417 A 6	3428 A 4	3434 A 4	3446 A 6	3460 A 5	3475 B 5	3483 A 4	3495 A 6	7400 A 5	7411 A 2	
2410 B 5	2418 A 9	2480 A 4	3404 A 6	3410 A 6	3419 B 5	3429 A 4	3441 A 6	3447 A 8	3462 B 4	3478 A 4	3485 A 8	3497 B 5	7402 A 6	7416 A 1	
2411 B 6	2419 A 9	3301 B 1	3405 B 5	3411 A 6	3422 B 5	3430 A 4	3442 A 6	3449 A 9	3464 A 5	3479 B 5	3489 A 9	3499 A 4	7403 A 6	7460 A 1	



1400 A 1	1406 B 8	1412 B 6	1418 B 4	1424 B 3	2461 A 3	2467 A 2	3418 B 5	3450 A 7	3466 A 2	3491 A 7	6304 B 1	6442 A 6	9402 A 9	9408 A 7	9414 B 6	9420 B 3	9426 A 3	9433 B 2
1401 A 1	1407 B 5	1413 A 8	1419 B 6	1490 A 9	2462 A 3	2468 A 2	3421 B 4	3451 A 7	3484 B 6	3496 A 3	6400 A 6	6460 A 1	9403 A 8	9409 A 7	9415 A 6	9421 B 7	9427 B 7	9434 B 6
1402 B 2	1408 B 7	1414 B 9	1420 A 5	1499 A 3	2463 A 3	2475 A 4	3424 A 3	3453 B 6	3486 B 6	5401 A 5	6401 A 2	6461 A 1	9404 A 8	9410 A 8	9416 B 8	9422 B 5	9429 B 6	9435 A 9
1403 B 5	1409 B 9	1415 B 8	1421 A 9	2402 A 6	2464 A 3	3400 A 2	3426 B 5	3461 A 3	3487 B 7	6301 B 1	6402 A 2	6462 B 1	9405 B 8	9411 A 8	9417 B 7	9423 B 5	9430 A 1	9436 B 3
1404 B 2	1410 B 8	1416 A 8	1422 B 3	2450 A 7	2465 A 3	3412 B 4	3438 A 2	3463 A 3	3488 B 7	6302 B 1	6416 A 2	7450 A 7	9406 A 8	9412 B 6	9418 B 4	9424 A 2	9431 A 1	9437 A 6
1405 A 7	1411 B 5	1417 B 7	1423 A 3	2460 A 3	2466 A 2	3416 A 2	3439 A 2	3465 A 2	3490 B 7	6303 B 1	6441 A 7	9401 A 9	9407 A 8	9413 B 6	9419 B 3	9425 B 6	9432 B 2	9450 B 6

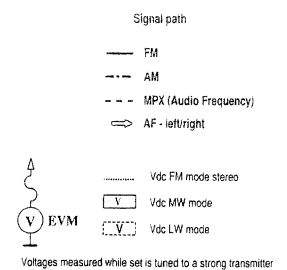
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partslist.



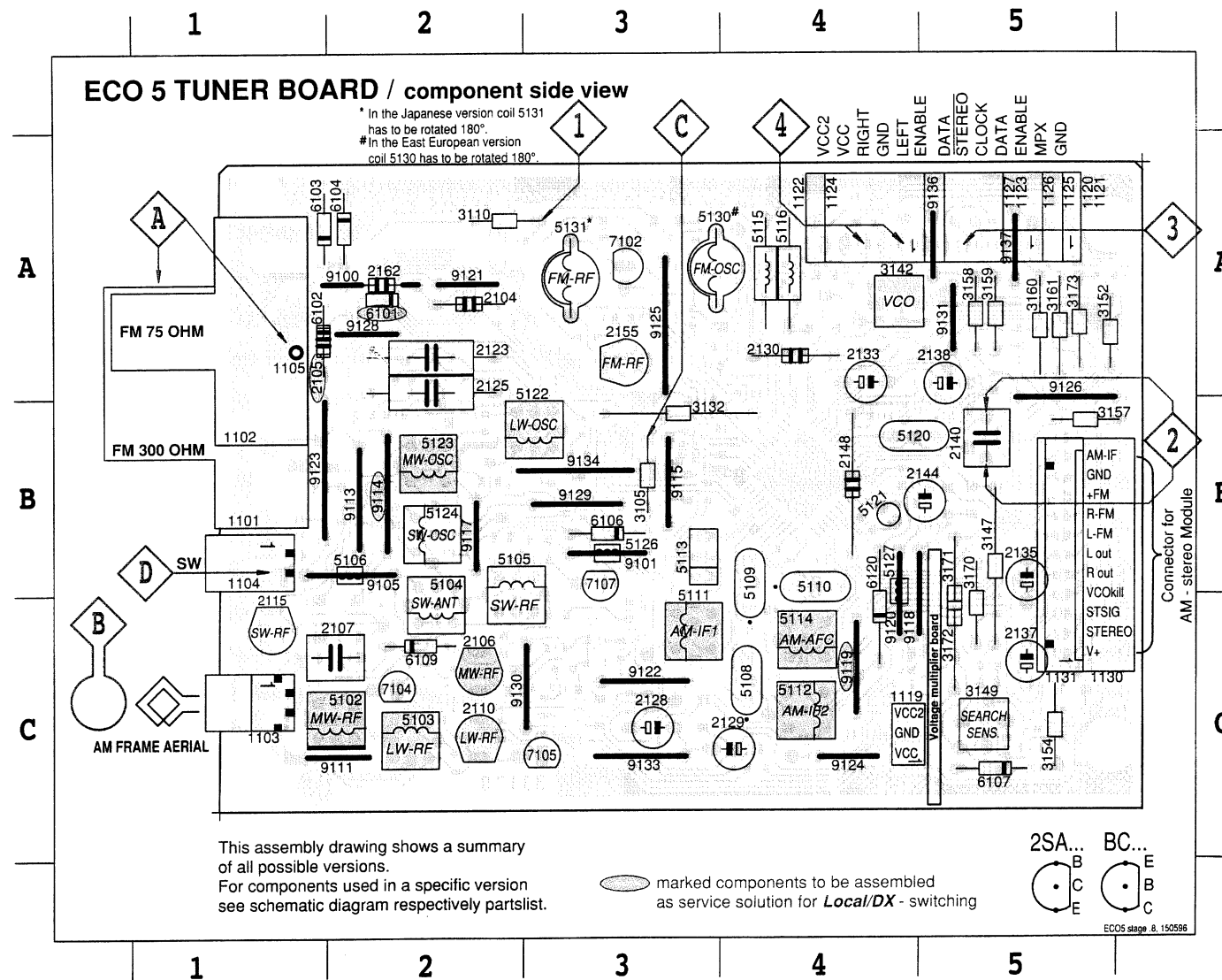
VERSION PROGRAMMING COMPONENTS					
	6120	3156	3157	3170	remark
/00 FMMW/LW	x	-	-	-	7111
/00 FMMW/LW/SW-Eu	-	-	-	-	not mounted
/01 FMMW-Stereo	-	-	x	-	SW
/01 FMMW	-	x	-	x	
/01 FMMW/SW-Or	-	x	-	-	
/06 FM-Japan/MW-stereo	-	-	-	x	
/13 FMMW-Stereo	-	-	x	-	SW
/14 FM-ORT/MW/LW	x	-	x	x	
/17 FMMW-Stereo	-	-	x	-	SW
/17 FMMW	x	-	-	x	
/.. FMMW/zxSW	-	-	x	x	
/15 FMMW/SW-Eu	-	x	x	x	

x = component mounted
SW = Software initialisation

- r....for RDS version only
- s...for East European version (/14/34) only
- t....for Japanese version (/06/26) only
- u...for 2-band (FM/AM) version only
- v...for SW-version 3.9-12.1MHz only
- w....for LW only
- x....not for all versions
- y....for USA version (/17/37) only
- z....for AM-STEREO (/06/13/26/33) versions only

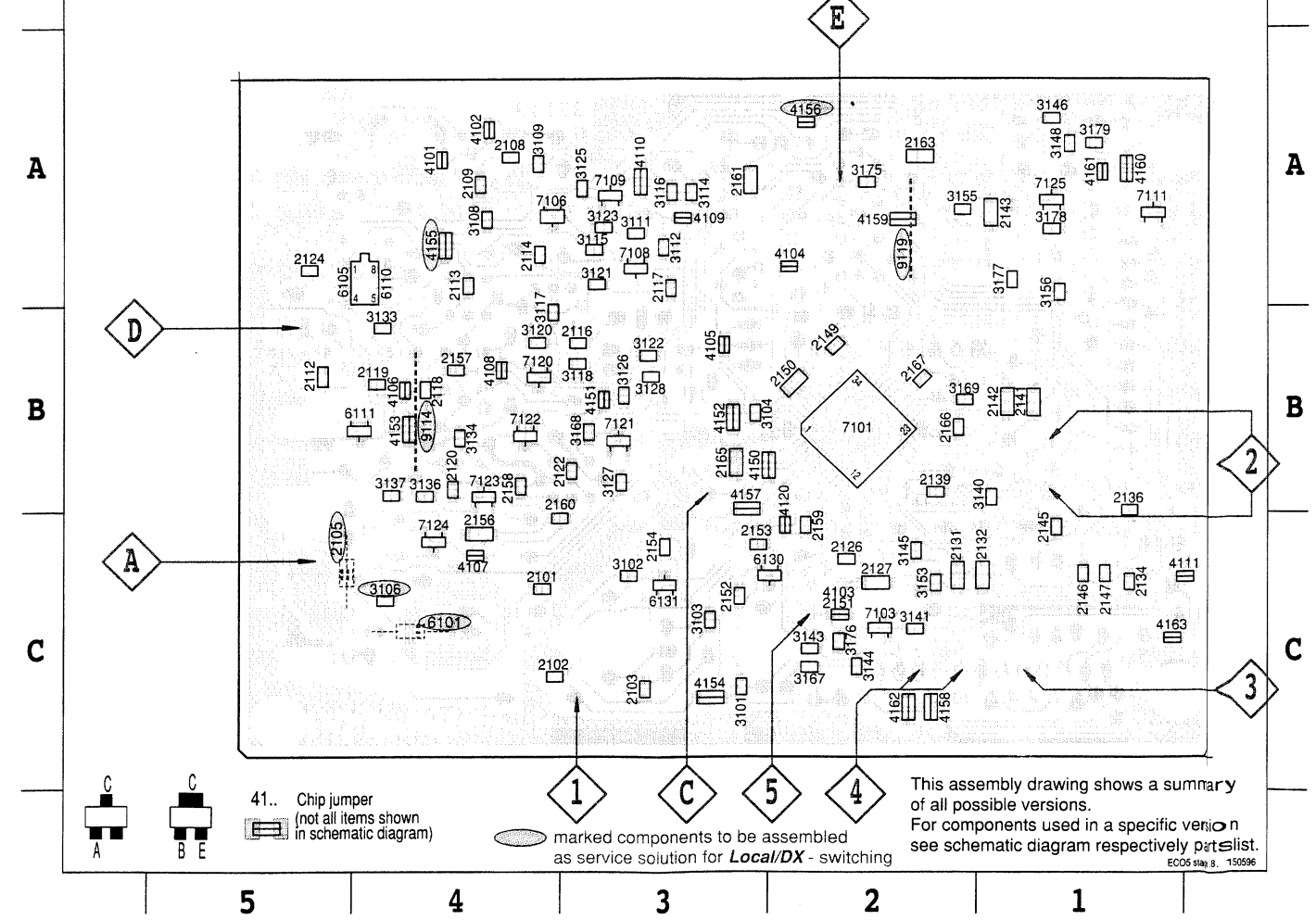


1101 A1	2106 C2	2137 C5	3147 B5	3172 C5	5112 C4	5127 B4	7102 A3	9117 B2	9129 B3
1102 A1	2107 C2	2138 A5	3149 C5	3173 A5	5113 B3	5130 A3	7104 C2	9118 B4	9130 C3
1103 C1	2110 C2	2140 B5	3152 A5	5102 C2	5114 C4	5131 A3	7105 C3	9119 C4	9131 A5
1104 B1	2115 C1	2144 B5	3154 C5	5103 C2	5115 A4	6101 A2	7107 B3	9120 B4	9133 C3
1105 A1	2123 A2	2148 B4	3157 B5	5104 C2	5116 A4	6102 A1	9100 A2	9121 A2	9134 B3
1119 C5	2125 A2	2155 A3	3158 A5	5105 B2	5120 B4	6103 A1	9101 B3	9122 C3	9136 A5
1120 A5	2128 C3	2162 A2	3159 A5	5106 B2	5121 B4	6104 A2	9105 B2	9123 B1	9137 A5
1130 B5	2129 C4	3105 B3	3160 A5	5108 C4	5122 B3	6106 B3	9111 C2	9124 C4	
1131 B5	2130 A4	3110 A2	3161 A5	5109 B4	5123 B2	6107 C5	9113 B2	9125 A3	
2104 A2	2133 A4	3132 B3	3170 C5	5110 B4	5124 B2	6109 C2	9114 B2	9126 B5	
2105 A1	2135 B5	3142 A4	3171 C5	5111 C3	5126 B3	6120 C4	9115 B3	9128 A2	



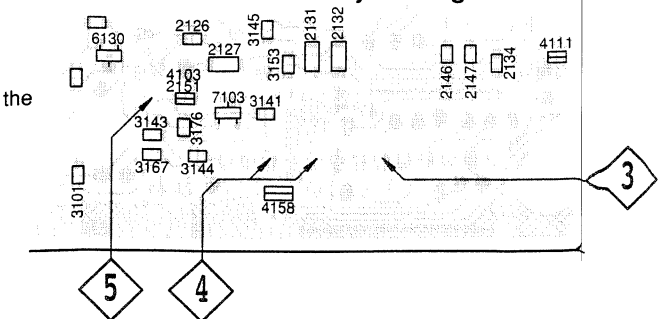
2101 C4	2119 B4	2141 B1	2154 C3	3101 C3	3116 A3	3133 B4	3153 C2	4101 A4	4120 C2	4160 A1	7106 A4
2102 C4	2120 B4	2142 B1	2156 C4	3102 C3	3117 B4	3134 B4	3155 A2	4102 A4	4150 B2	4161 A1	7108 A3
2103 C3	2122 B3	2143 A1	2157 B4	3103 C3	3118 B3	3136 B4	3156 A1	4103 C2	4151 B3	4162 C1	7109 A3
2108 A4	2124 A5	2145 C1	2158 B4	3104 B3	3120 B4	3137 B4	3167 C2	4104 A2	4152 B3	4163 C1	7111 A1
2109 A4	2126 C2	2146 C1	2159 C2	3106 C4	3121 A3	3140 B1	3168 B3	4105 B3	4153 B4	6105 A4	7120 B4
2112 B5	2127 C2	2147 C1	2160 C4	3108 A4	3122 B3	3141 C2	3169 B2	4106 B4	4154 C3	6110 A4	7121 B3
2113 A4	2131 C2	2149 B2	2161 A3	3109 A4	3123 A3	3143 C2	3175 A2	4107 C4	4155 A4	6111 B4	7122 B4
2114 A4	2132 C1	2150 B2	2163 A2	3111 A3	3125 A3	3144 C2	3176 C2	4108 B4	4156 A2	6130 C2	7123 B4
2116 B3	2134 C1	2151 C2	2165 B3	3112 A3	3126 B3	3145 C2	3177 A1	4109 A3	4157 B3	6131 C3	7124 C4
2117 A3	2136 B1	2152 C3	2166 B2	3114 A3	3127 B3	3146 A1	3178 A1	4110 A3	4158 C2	7101 B2	7125 A1
2118 B4	2139 B2	2153 C3	2167 B2	3115 A3	3128 B3	3148 A1	3179 A1	4111 C1	4159 A2	7103 C2	

ECO 5 TUNER BOARD / copper side view



different area layout stage .6

The layout stage can be identified by the last digit of the 12-figure number, printed in the copper pattern



ECO 5 TUNER BOARD / copper side view

The diagram shows the copper side of the ECO 5 Tuner Board. It includes a detailed view of the connector for the AM-stereo module on the left, showing pins for DATA, ENABLE, MPX, GND, and various signal lines. The main board area is populated with numerous components, including resistors, capacitors, and integrated circuits, each labeled with a reference designator. A legend at the bottom left defines symbols for chip jumpers and components to be assembled as a service solution for Local/DX switching. A note at the bottom right states that the assembly drawing shows a summary of all possible versions and refers to the schematic diagram and parts list for specific components.

Connector for AM - stereo Module

DATA
ENABLE
MPX
GND

3137
3160
3161
3173
3152

9126
3157

AM-IF
GND
+FM
R-FM
L-FM
L out
R out
VCO kill
ST SIG
STEREO
V+

2135
2137
1131
1130
3154
107

2SA... BC...
B C E
B C E

ECO5 stage 8.150596

Legend:

41.. Chip jumper
(not all items shown
in schematic diagram)

marked components to be assembled
as service solution for **Local/DX** - switching

This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partlist.

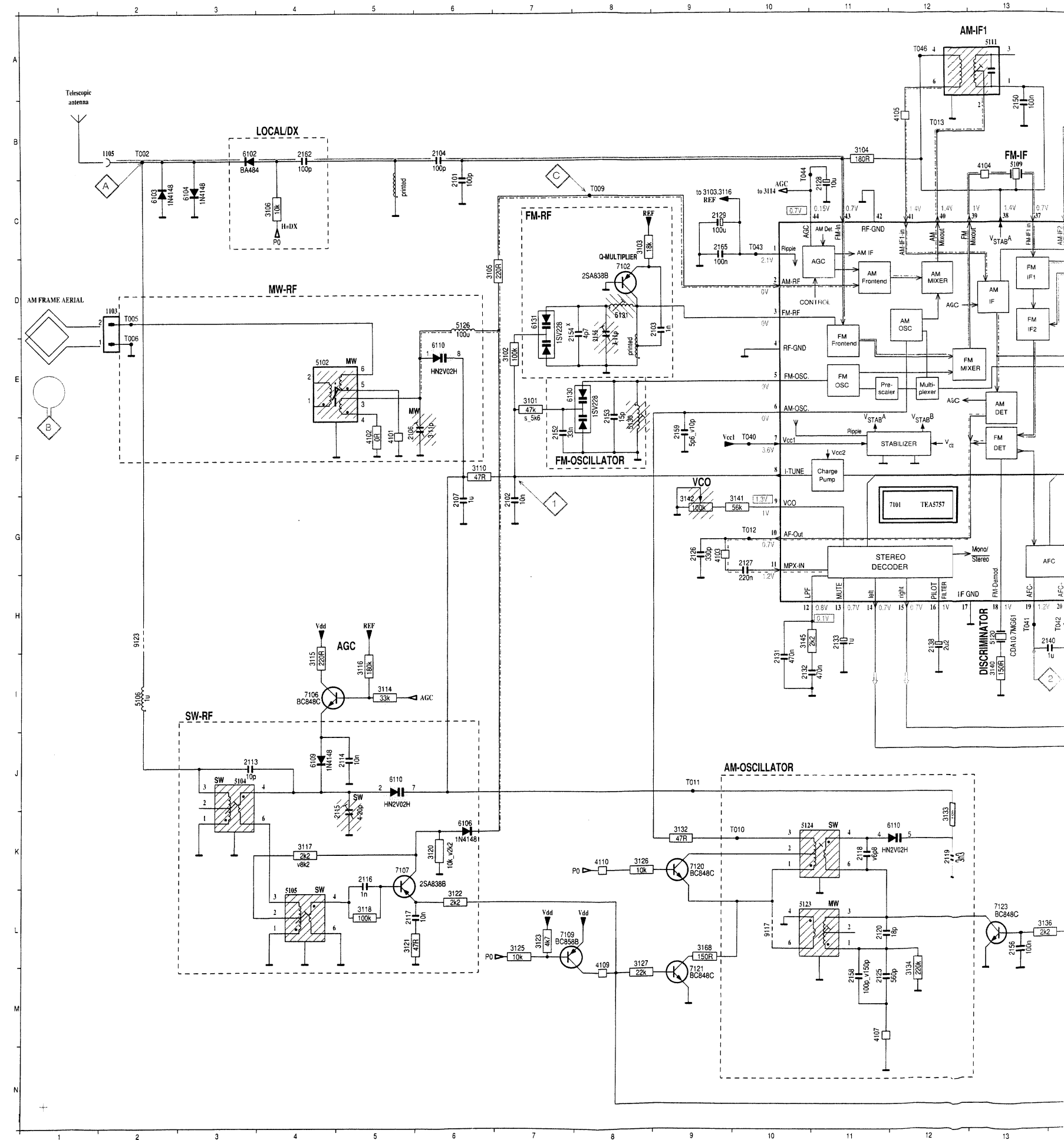
ECO5 stage 8.150596

different area layout stage .6

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
<i>VARICAP ALIGNMENT</i>						
FM			108MHz	5130	1	8V ±0.2V
87.5 - 108MHz			87.5MHz	check		4.3V ±0.5V
MW			1700kHz	5123		8V ±0.2V
FM/AM-version, 10kHz grid 530 - 1700kHz			530kHz	check		1.1V ±0.4V
LW			279kHz	5122		8V ±0.2V
153 - 279kHz			153kHz	check		1.1V ±0.4V
MW			1602kHz	5123		8V ±0.2V
FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz			531kHz	check		1.1V ±0.4V
<i>FM RF</i>						
FM	108MHz	A	108MHz	2155	4	MAX
87.5 - 108MHz	87.5MHz	mod=1kHz Δf=±22.5kHz	87.5MHz	5131		
<i>VCO</i>						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz ¹⁾
<i>AM IF</i>						
MW	450kHz connect pin 26 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	C Δf=±15kHz V _{RF} = 3mV		5111 5112	4	
AM AFC		C continuous wave V _{RF} = 10mV		5114		
MW					2	0 ± 2 mV DC
<i>AM RF ³⁾</i>						
MW ⁴⁾	1494kHz	B 	1494kHz	2106	4	
FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW	1500kHz		1500kHz	2106		
FM/AM-version, 10kHz grid 530 - 1700kHz	560kHz	Δf = ±30kHz V _{RF} as low as possible	560kHz	5102		

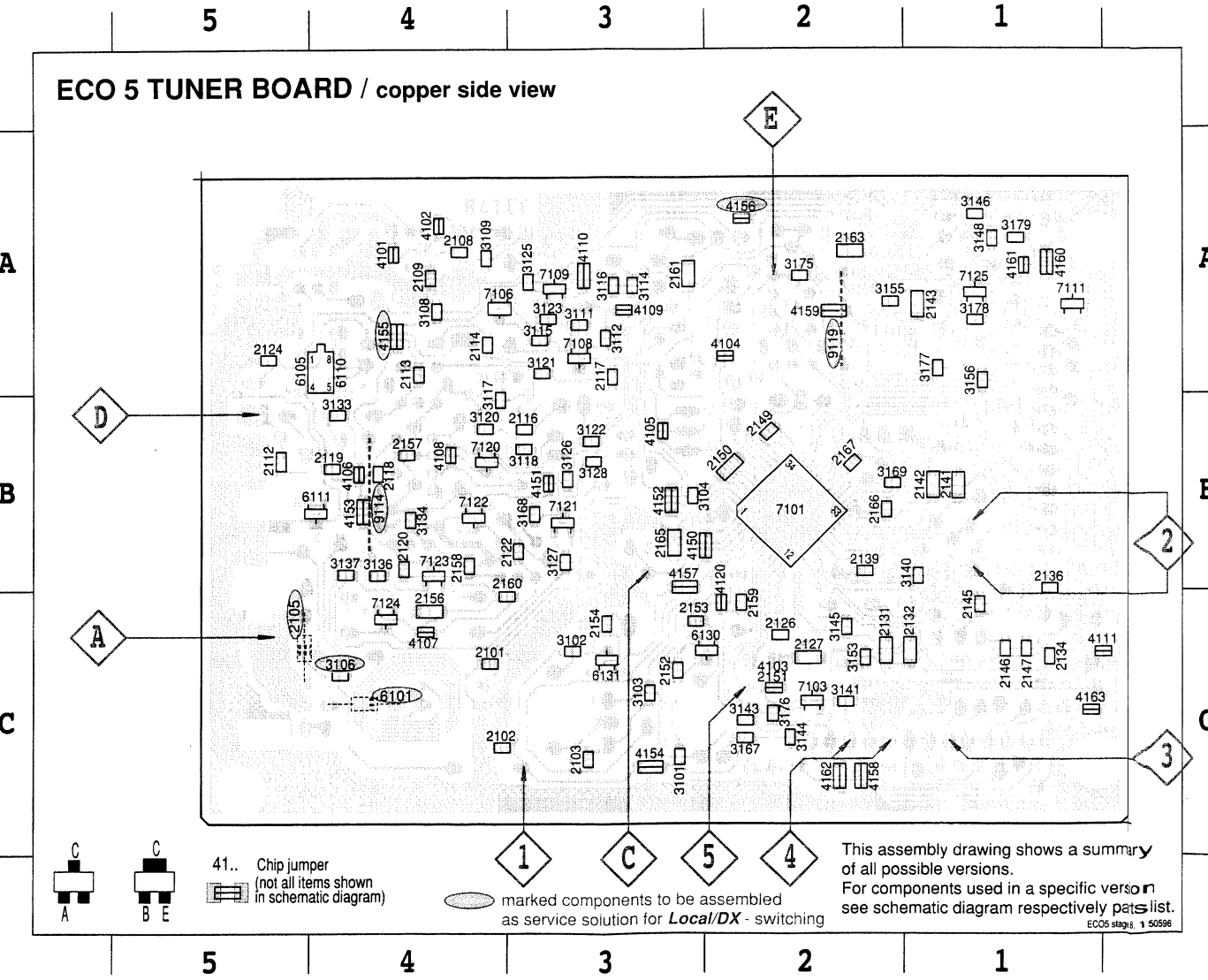
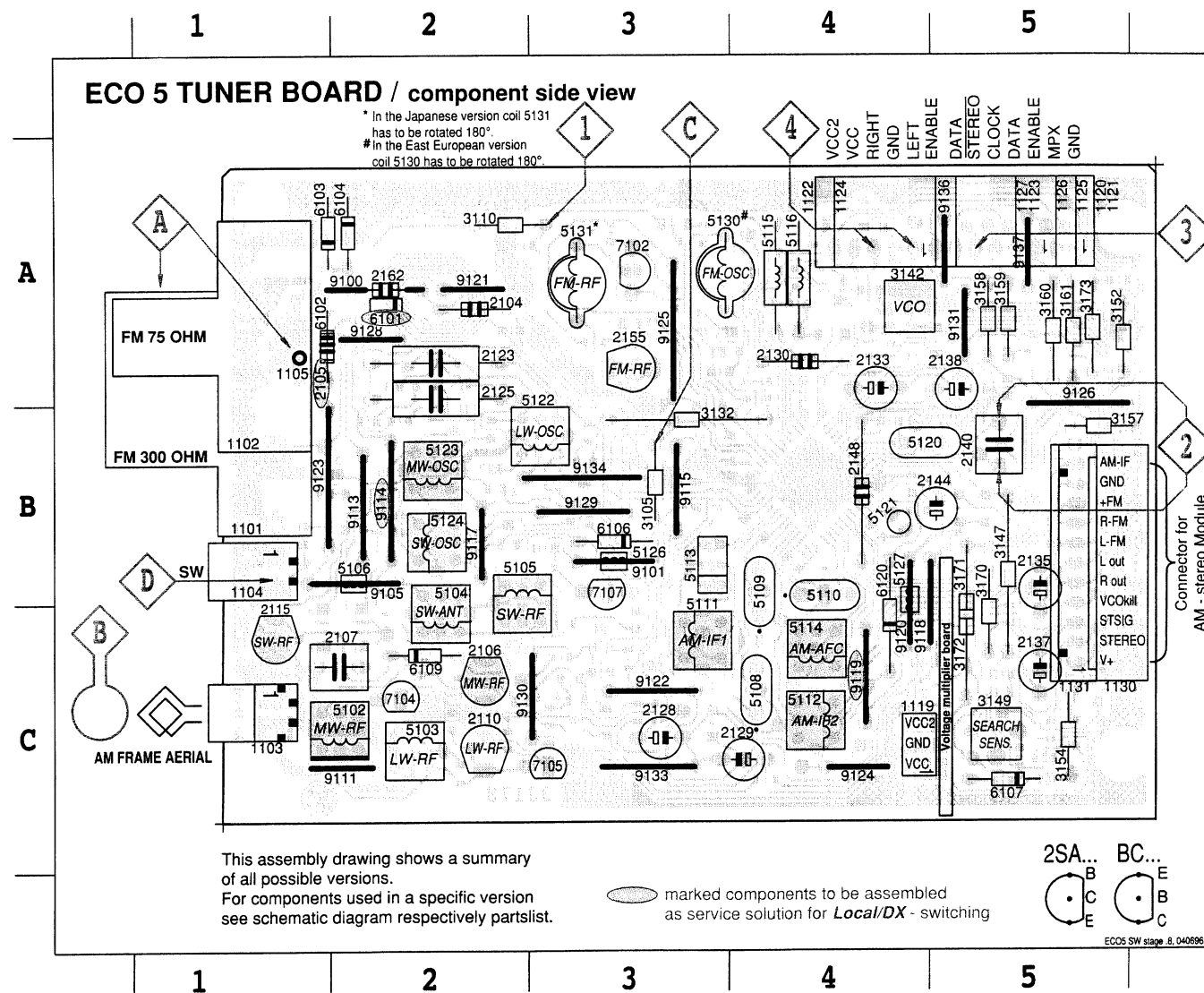
↑ Repeat

TUNER BOARD ECO5 / PA (FM/MW/SW)

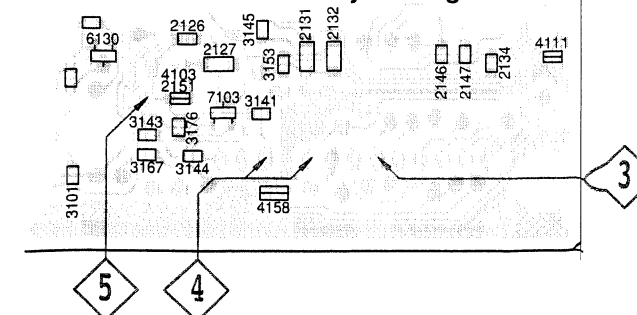


1101 A1	2106 C2	2137 C5	3147 B5	3172 C5	5112 C4	5127 B4	7102 A3	9117 B2	9129 B3
1102 A1	2107 C2	2138 A5	3149 C5	3173 A5	5113 B3	5130 A3	7104 C2	9118 B4	9130 C3
1103 C1	2110 C2	2140 B5	3152 A5	5102 C2	5114 C4	5131 A3	7105 C3	9119 C4	9131 A5
1104 B1	2115 C1	2144 B5	3154 C5	5103 C2	5115 A4	6101 A2	7107 B3	9120 B4	9133 C3
1105 A1	2123 A2	2148 B4	3157 B5	5104 C2	5116 A4	6102 A1	9100 A2	9121 A2	9134 B3
1119 C5	2125 A2	2155 A3	3158 A5	5105 B2	5120 B4	6103 A1	9101 B3	9122 C3	9136 A5
1120 A5	2128 C3	2162 A2	3159 A5	5106 B2	5121 B4	6104 A2	9105 B2	9123 B1	9137 A5
1130 B5	2129 C4	3105 B3	3160 A5	5108 C4	5122 B3	6106 B3	9111 C2	9124 C4	
1131 B5	2130 A4	3110 A2	3161 A5	5109 B4	5123 B2	6107 C5	9113 B2	9125 A3	
2104 A2	2133 A4	3132 B3	3170 C5	5110 B4	5124 B2	6109 C2	9114 B2	9126 B5	
2105 A1	2135 B5	3142 A4	3171 C5	5111 C3	5126 B3	6120 C4	9115 B3	9128 A2	

2101 C4	2119 B4	2141 B1	2154 C3	3101 C3	3116 A3	3133 B4	3153 C2	4101 A4	4120 C2	4160 A1	7106 A4
2102 C4	2120 B4	2142 B1	2156 C4	3102 C3	3117 B4	3134 B4	3155 A2	4102 A4	4150 B2	4161 A1	7108 A3
2103 C3	2122 B3	2143 A1	2157 B4	3103 C3	3118 B3	3136 B4	3156 A1	4103 C2	4151 B3	4162 C1	7109 A3
2108 A4	2124 A5	2145 C1	2158 B4	3104 B3	3120 B4	3137 B4	3167 C2	4104 A2	4152 B3	4163 C1	7111 A1
2109 A4	2126 C2	2146 C1	2159 C2	3106 C4	3121 A3	3140 B1	3168 B3	4105 B3	4153 B4	6105 A4	7120 B4
2112 B5	2127 C2	2147 C1	2160 C4	3108 A4	3122 B3	3141 C2	3169 B2	4106 B4	4154 C3	6110 A4	7121 B3
2113 A4	2131 C2	2149 B2	2161 A3	3109 A4	3123 A3	3143 C2	3175 A2	4107 C4	4155 A4	6111 B4	7122 B4
2114 A4	2132 C1	2150 B2	2163 A2	3111 A3	3125 A3	3144 C2	3176 C2	4108 B4	4156 A2	6130 C2	7123 B4
2116 B3	2134 C1	2151 C2	2165 B3	3112 A3	3126 B3	3145 C2	3177 A1	4109 A3	4157 B3	6131 C3	7124 C4
2117 A3	2136 B1	2152 C3	2166 B2	3114 A3	3127 B3	3146 A1	3178 A1	4110 A3	4158 C2	7101 B2	7125 A1
2118 B4	2139 B2	2153 C3	2167 B2	3115 A3	3128 B3	3148 A1	3179 A1	4111 C1	4159 A2	7103 C2	



different area layout stage .6



The layout stage can be identified by the last digit of the 12-figure number, printed in the copper pattern

TUN

VA

FM

87

MW

53

SW

3.5

FM

FM

87

VC

FM

AM

MW

AM

MW

MW

53

SW

3.

Use s

1) If s

(in)

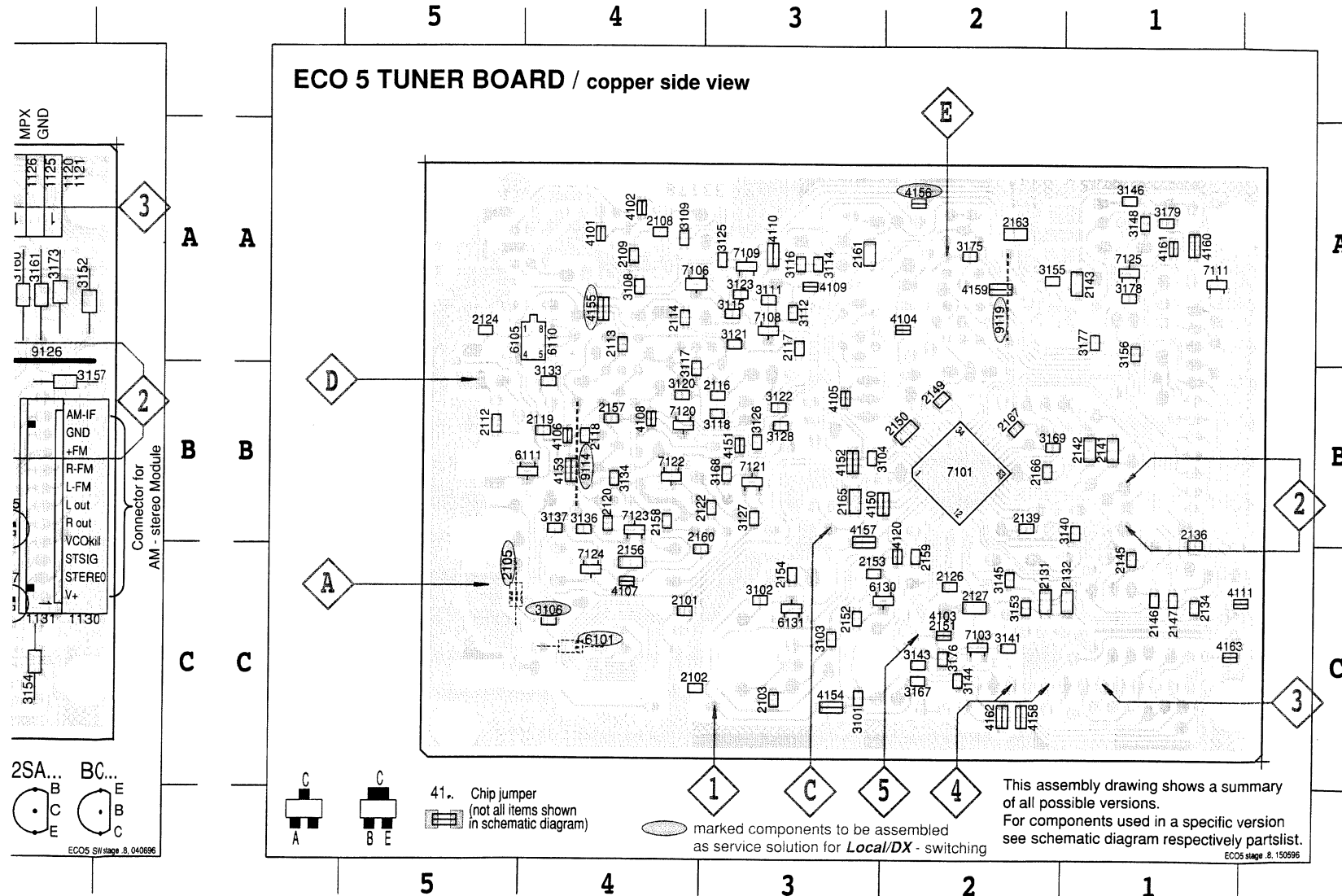
2) RC

3) For

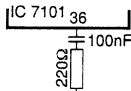
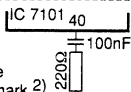
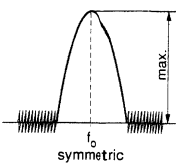

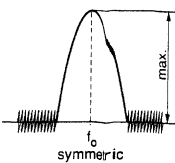
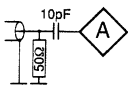
4) Ali

Rep

9129 B3	2101 C4	2119 B4	2141 B1	2154 C3	3101 C3	3116 A3	3133 B4	3153 C2	4101 A4	4120 C2	4160 A1	7106 A4
9130 C3	2102 C4	2120 B4	2142 B1	2156 C4	3102 C3	3117 B4	3134 B4	3155 A2	4102 A4	4150 B2	4161 A1	7108 A3
9131 A5	2103 C3	2122 B3	2143 A1	2157 B4	3103 C3	3118 B3	3136 B4	3156 A1	4103 C2	4151 B3	4162 C1	7109 A3
9133 C3	2108 A4	2124 A5	2145 C1	2158 B4	3104 B3	3120 B4	3137 B4	3167 C2	4104 A2	4152 B3	4163 C1	7111 A1
9134 B3	2109 A4	2126 C2	2146 C1	2159 C2	3106 C4	3121 A3	3140 B1	3168 B3	4105 B3	4153 B4	6105 A4	7120 B4
9136 A5	2112 B5	2127 C2	2147 C1	2160 C4	3108 A4	3122 B3	3141 C2	3169 B2	4106 B4	4154 C3	6110 A4	7121 B3
9137 A5	2113 A4	2131 C2	2149 B2	2161 A3	3109 A4	3123 A3	3143 C2	3175 A2	4107 C4	4155 A4	6111 B4	7122 B4
	2114 A4	2132 C1	2150 B2	2163 A2	3111 A3	3125 A3	3144 C2	3176 C2	4108 B4	4156 A2	6130 C2	7123 B4
	2116 B3	2134 C1	2151 C2	2165 B3	3112 A3	3126 B3	3145 C2	3177 A1	4109 A3	4157 B3	6131 C3	7124 C4
	2117 A3	2136 B1	2152 C3	2166 B2	3114 A3	3127 B3	3146 A1	3178 A1	4110 A3	4158 C2	7101 B2	7125 A1
	2118 B4	2139 B2	2153 C3	2167 B2	3115 A3	3128 B3	3148 A1	3179 A1	4111 C1	4159 A2	7103 C2	



TUNER ADJUSTMENT TABLE (ECO5 FM/MW/SW - versions with MW-frame aerial)

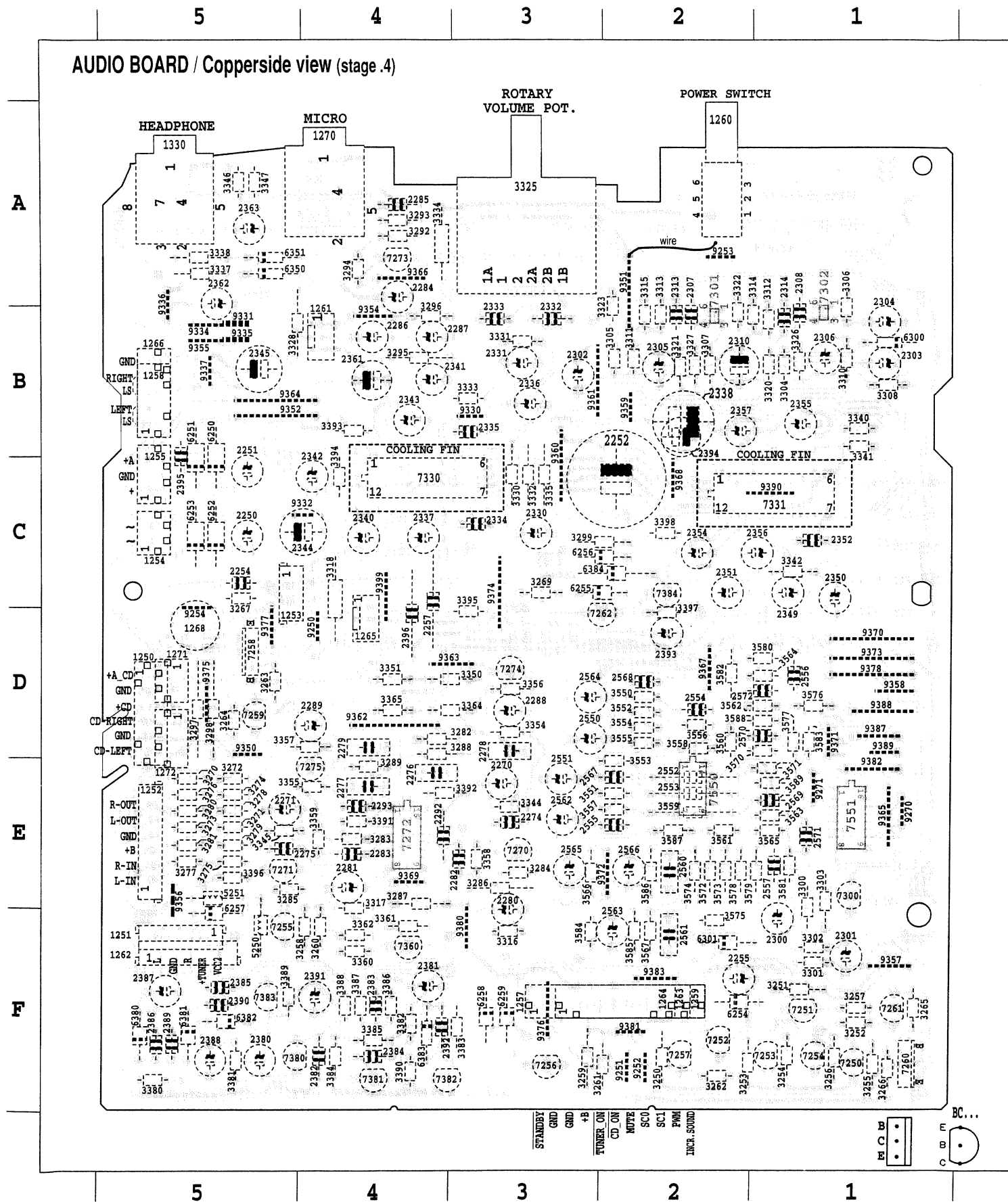
Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter	
VARICAP ALIGNMENT							
FM			108MHz	5130	1	8V ±0.2V	
87.5 - 108MHz			87.5MHz	check		4.3V ±0.5V	
MW			1700kHz	5123		8V ±0.2V	
530 - 1700kHz			530kHz	check		1.1V ±0.4V	
SW			12.1MHz	5124		8V ±0.2V	
3.9 - 12.1MHz			3.9MHz	check		1.1V ±0.4V	
FM RF							
FM	108MHz	A mod=1kHz Δf=±22.5kHz	108MHz	2155	4	MAX	
87.5 - 108MHz	87.5MHz		87.5MHz	5131			
VCO							
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz ¹⁾	
AM IF							
MW	450kHz connect pin 26 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	C Δf=±15kHz V _{RF} = 3mV	  see remark 2)	5111 5112	4	 symmetric	
AM AFC MW		C continuous wave V _{RF} = 10mV		5114			2
AM RF ³⁾							
MW	1500kHz	B  Δf = ±30kHz V _{RF} as low as possible	1500kHz	2106	4	 symmetric	
530 - 1700kHz	560kHz		560kHz	5102			
SW ⁴⁾	11MHz	A 	11MHz	2115			
3.9 - 12.1MHz	4.2MHz			4.2MHz	5105		

Use service test program. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

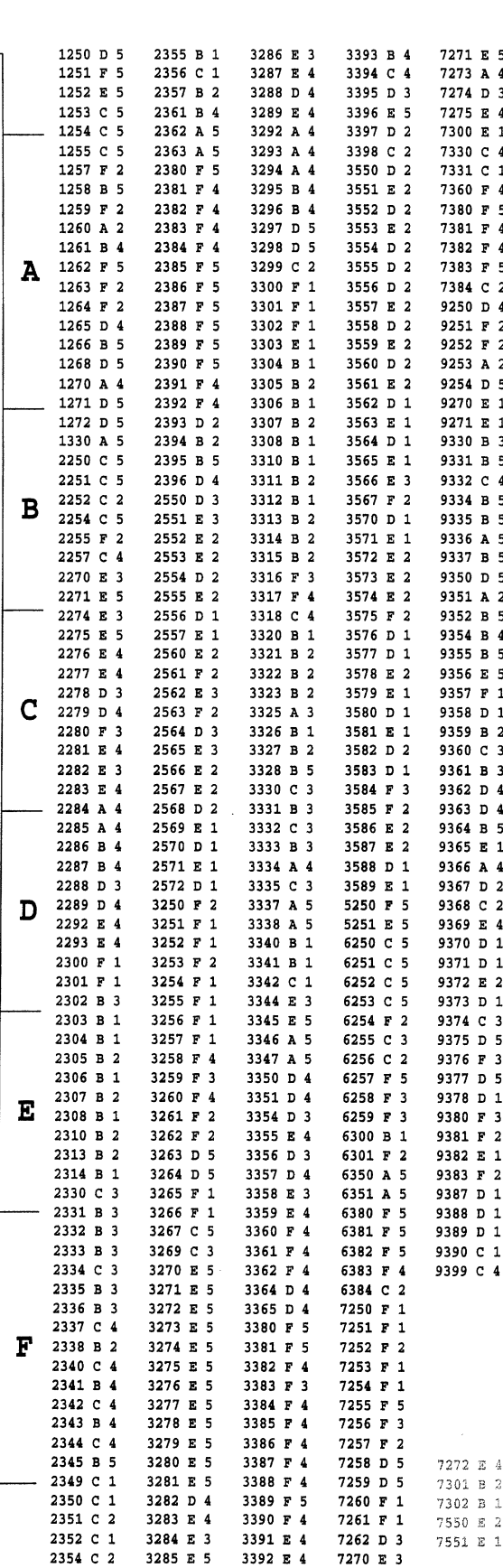
- 1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)
- 2) RC network serves for damping the IF-filter while adjusting the other one.
- 3) For MW adjustments the original frame antenna has to be used !
- 4) Align 5104 to max. inductivity first (core completely screwed in).

↑ Repeat

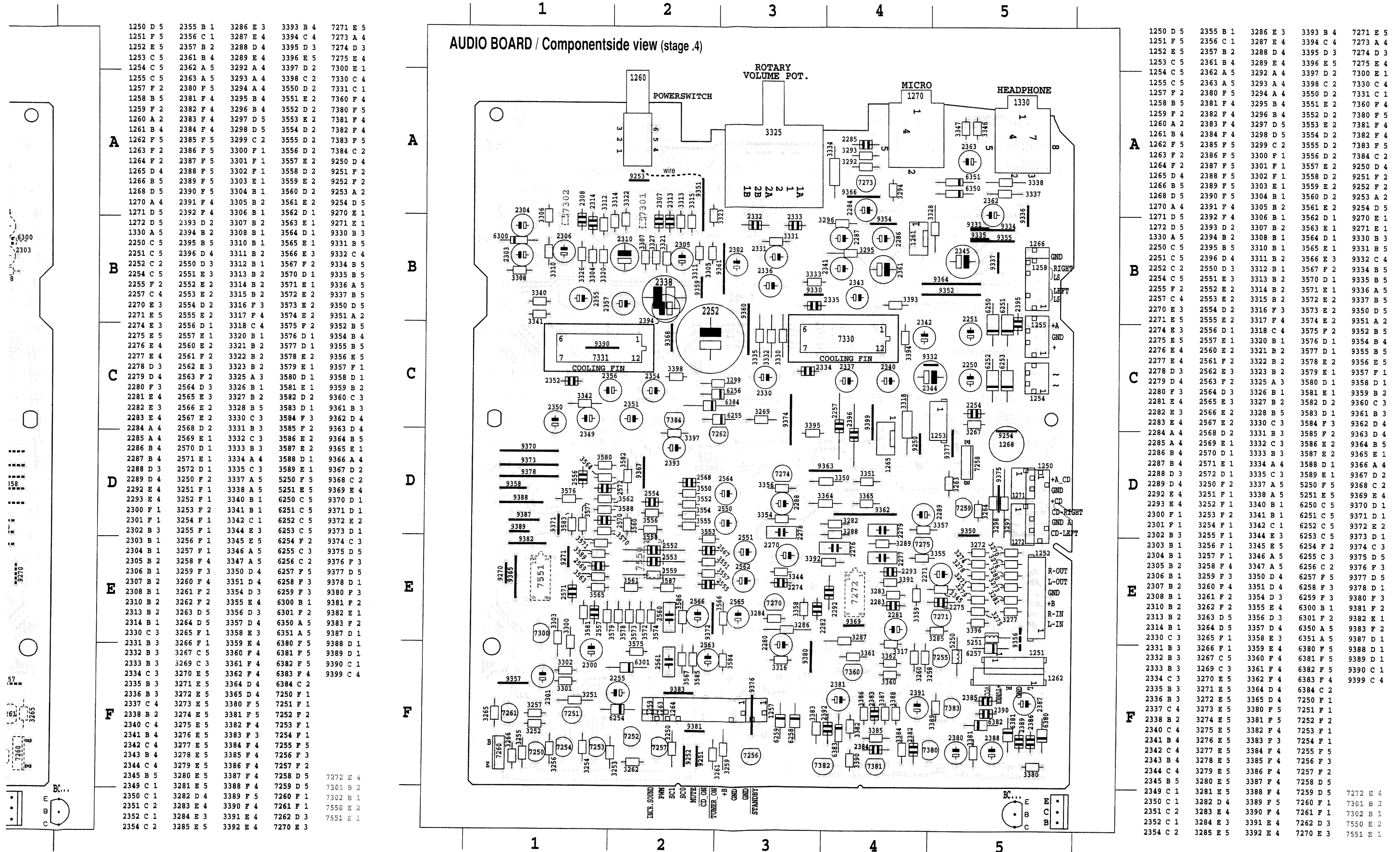
ECO5 PA, 040696



This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partlist.



This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partlist.



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partslist.

AUDIO BOARD AZ2808

MICROPHONE SOCKET

ESD protection

CD Module

Tuner

Recorder module

Motor

Display Backlight

MAINS BOARD

TRANSFORMER

BATTERIES

DIGITAL SOUND CONTROL (DSC)

INCREDIBLE SOUND

ELECTRONIC VOLUME CONTROL

VOLTAGE MULTIPLIER

OSCILLATOR

STABILIZING CIRCUIT +B

Power switch

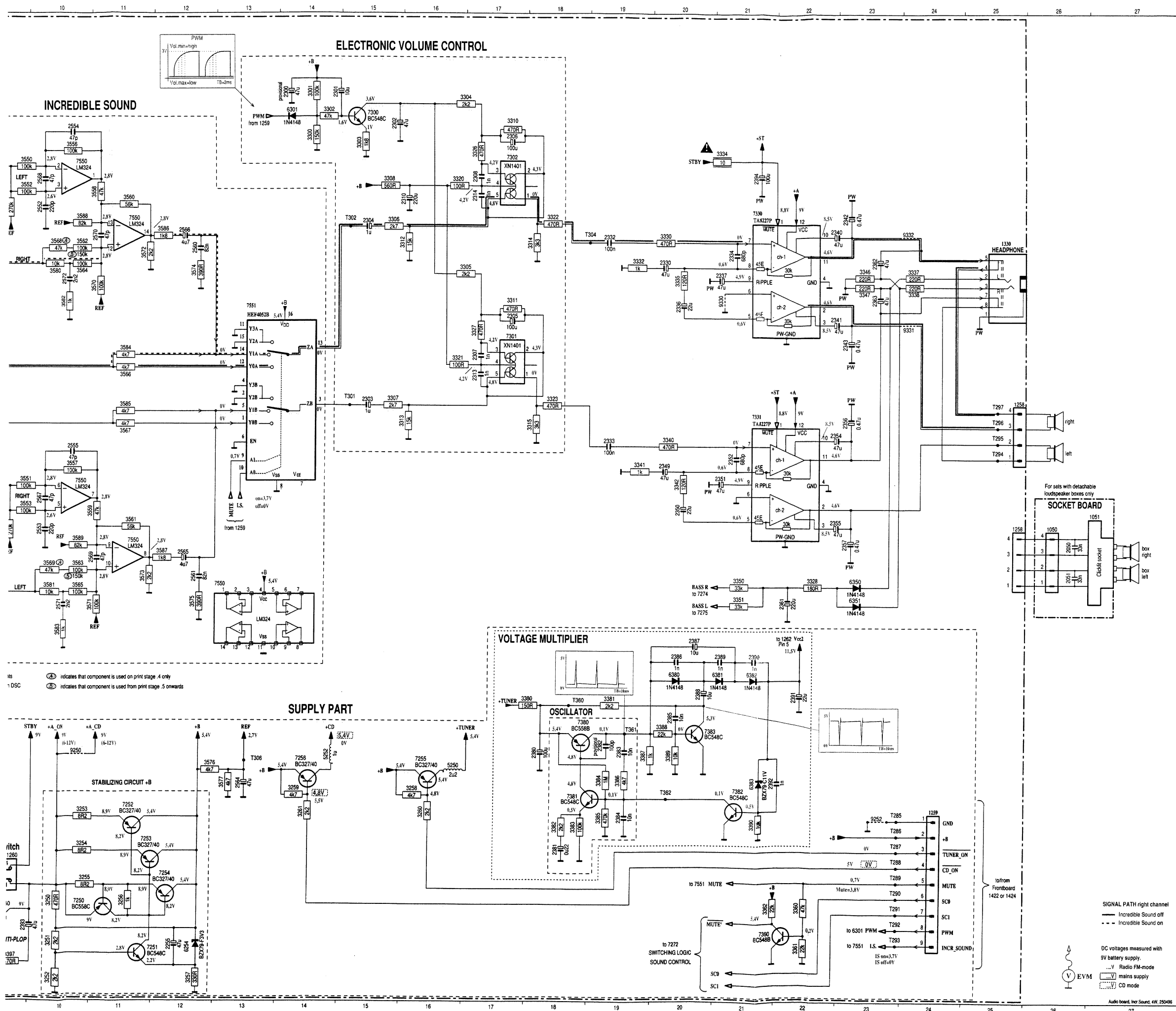
ANTI-PLOP

Fuse Table

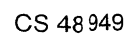
Component List

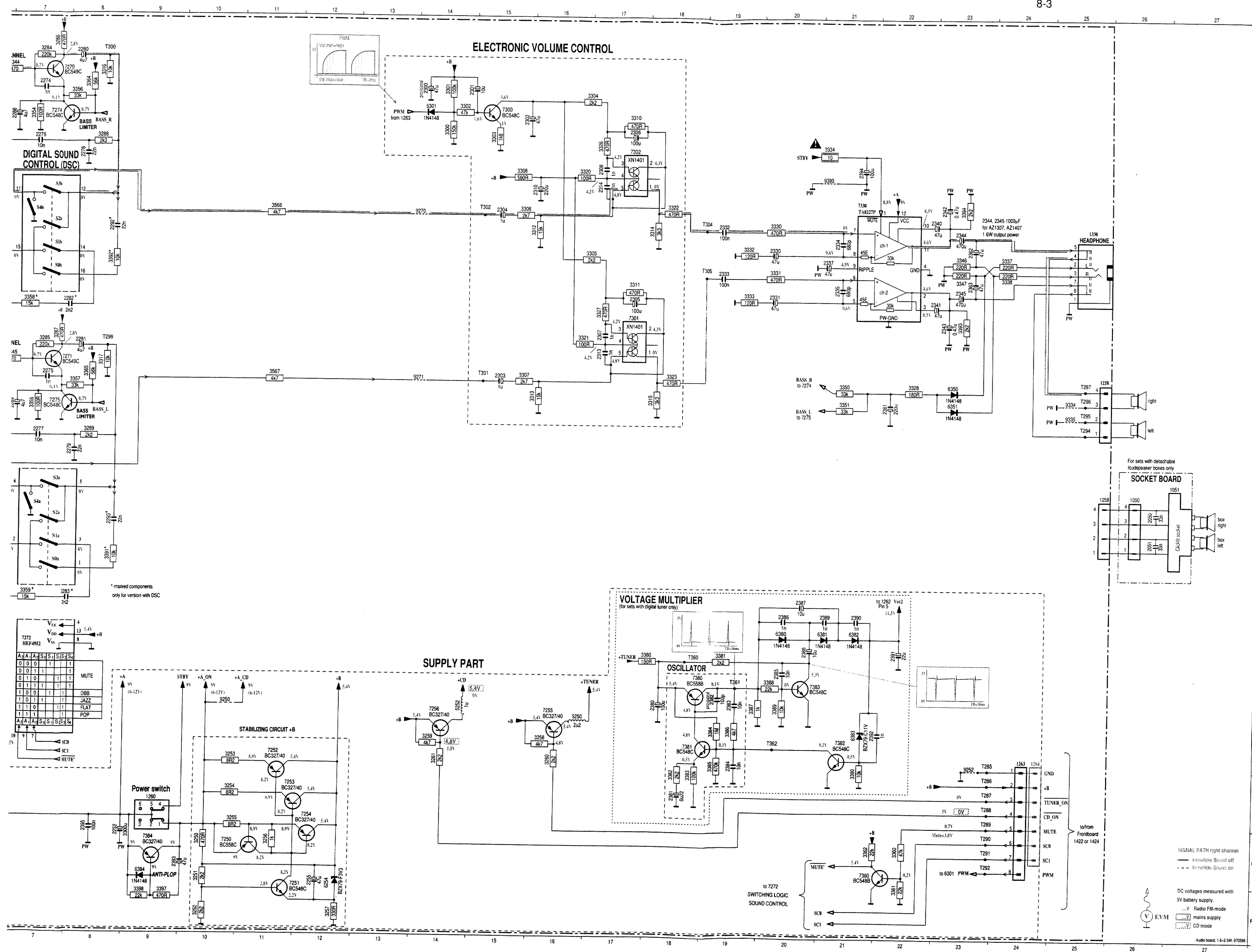
Legend

Notes



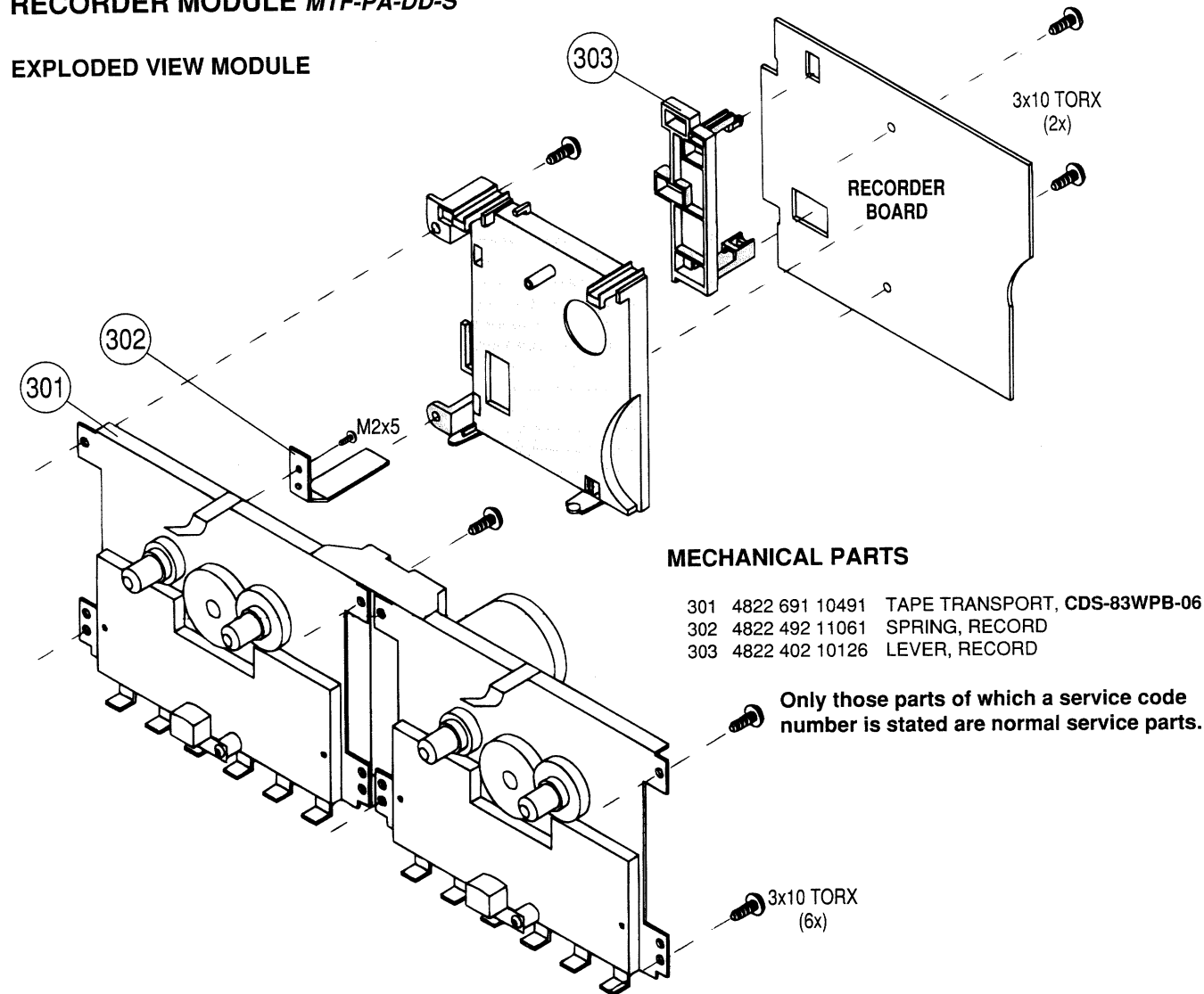
1250 D 3	3318 I 4
1251 F 3	3320 C16
1252 H 3	3321 F16
1253 I 3	3322 D18
1254 N 4	3323 S18
1255 O 4	3326 C17
1256 G25	3327 F17
1259 M24	3328 J22
1260 N 9	3330 D20
1262 F 3	3332 E19
1265 J 3	3334 C21
1266 N 4	3335 E20
1270 B 2	3337 E24
1330 D25	3338 E24
2250 N 5	3340 G20
2251 O 5	3341 H19
2252 O 8	3342 H20
2254 N 5	3344 A 8
2255 O12	3345 F 6
2257 P 5	3346 E23
2270 A 6	3347 E23
2271 F 6	3350 J21
2274 B 7	3351 J21
2275 G 7	3354 B 7
2276 C 7	3355 G 7
2277 H 7	3356 B 8
2278 C 8	3357 G 8
2279 H 8	3358 K 7
2280 A 8	3359 F 7
2281 F 8	3360 Q22
2282 F 7	3361 P22
2283 K 7	3362 Q21
2284 B 3	3364 B 8
2285 B 4	3365 G 8
2286 A 5	3366 I 8
2287 A 4	3381 L19
2288 B 7	3382 N18
2289 G 7	3383 N18
2292 D 8	3384 M19
2293 I 8	3385 M19
2300 B14	3386 M19
2301 B14	3387 L19
2302 B15	3388 L20
2303 G15	3389 L20
2304 D15	3390 N21
2305 E17	3391 J 8
2306 C17	3392 E 8
2307 F17	3395 K 4
2308 C17	3396 K 4
2310 D16	3397 P 9
2313 F17	3398 P 9
2314 C17	3550 P 9
2330 E20	3551 H 9
2332 D19	3552 C 9
2333 G19	3553 H 9
2334 D21	3554 D 9
2336 E20	3555 I 9
2337 E21	3556 C10
2340 Q22	3557 H10
2341 E22	3558 C11
2342 D23	3559 I10
2343 F23	3560 D11
2349 H20	3561 I11
2350 H20	3562 D10
2351 H21	3563 I10
2352 H21	3564 E10
2354 G22	3565 J10
2355 E22	3566 F11
2356 G23	3567 C11
2357 I23	3568 D10
2361 J22	3569 I10
2362 E23	3570 E11
2363 E23	3571 J10
2380 L18	3572 D11
2381 N18	3573 I11
2382 L19	3574 E12
2383 L19	3575 J12
2384 M19	3576 M12
2385 L20	3577 M13
2386 K20	3580 E10
2387 K20	3581 I10
2388 K20	3582 E10
2389 K21	3583 J10
2390 K21	3584 F11
2391 K22	3585 C11
2392 M21	3586 D12
2393 O 9	3587 I12
2394 D21	3588 D10
2395 O 8	3589 I10
2396 E 4	5250 M16
2550 C 9	5251 F 4
2551 H 9	5252 L14
2552 D10	6250 N 5
2553 I 0	6251 O 5
2554 B10	6252 A 6
2555 H10	6253 O 6
2560 D12	6254 P12
2561 I12	6255 A 5
2562 E 9	6256 L 5
2563 J 9	6257 G 4
2564 M13	6258 M13
2565 I12	6259 C 4
2566 D12	6301 B14
2567 H10	6350 J23
2568 C10	6351 J23
2569 I11	6380 K20
2570 D11	6381 K21
2571 I10	6382 K21
2572 E10	6383 M21
3250 O10	6384 O 9
3251 O10	7250 O10
3252 P10	7251 P11
3253 M10	7252 M11
3254 N10	7253 N11
3255 M10	7254 N12
3256 D11	7255 M16
3257 P12	7256 M14
3258 M16	7258 K 4
3259 M14	7270 A 7
3260 M16	7271 G 7
3261 M14	7272 K 7
3267 P 8	7273 B 5
3269 K 5	7274 B 7
3270 D 4	7275 G 7
3271 E 4	7300 B15
3272 E 4	7301 F17
3273 E 4	7302 C17
3274 F 4	7303 D21
3275 G 4	7331 G21
3276 F 4	7360 O21
3277 G 4	7380 L18
3278 H 4	7381 M18
3279 H 4	7382 M21
3280 H 4	7383 L20
3281 G 4	7384 O 9
3282 C 6	7550 C10
3283 H 6	7550 H10
3284 A 7	7550 I11
3285 F 7	7550 D11
3286 A 7	7551 E13
3287 F 7	9250 L10
3288 C 8	9252 M23
3289 H 8	9330 E21
3292 B 4	9331 F24
3293 A 3	9332 D24
3294 B 4	
3295 A 4	
3296 A 4	
3297 C 5	
3298 C 5	
3299 K 4	
3300 C14	
3301 B14	
3302 B14	
3303 C15	
3304 B16	
3305 E16	
3306 D15	
3307 G15	
3308 C15	
3310 B17	
3311 E17	
3312 D15	
3313 G15	
3314 D18	
3315 G18	
3316 A 8	
3317 G 8	





RECORDER MODULE MTF-PA-DD-S

EXPLODED VIEW MODULE

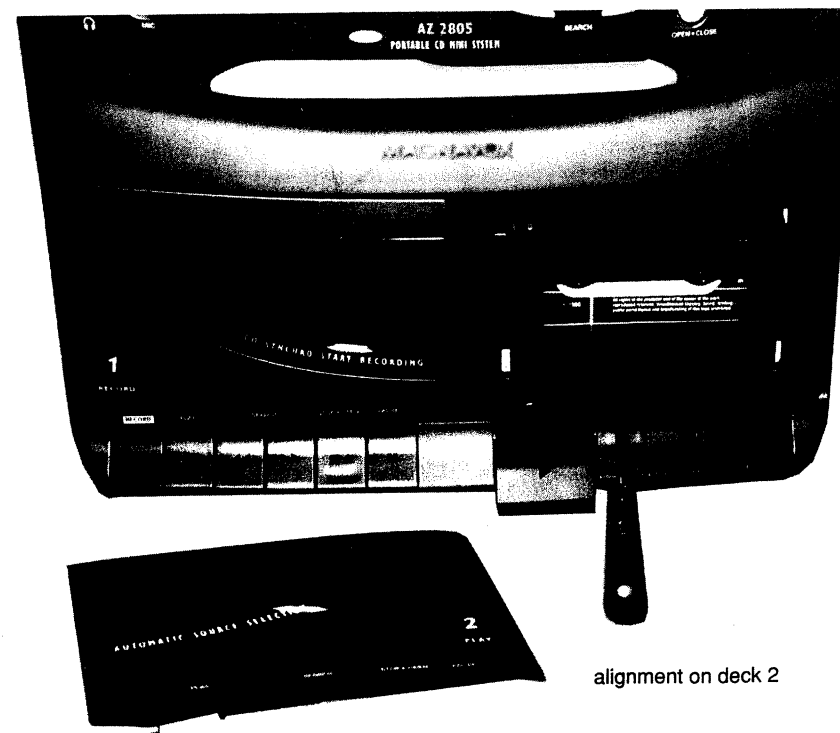


MECHANICAL PARTS

Only those parts of which a service code number is stated are normal service parts.

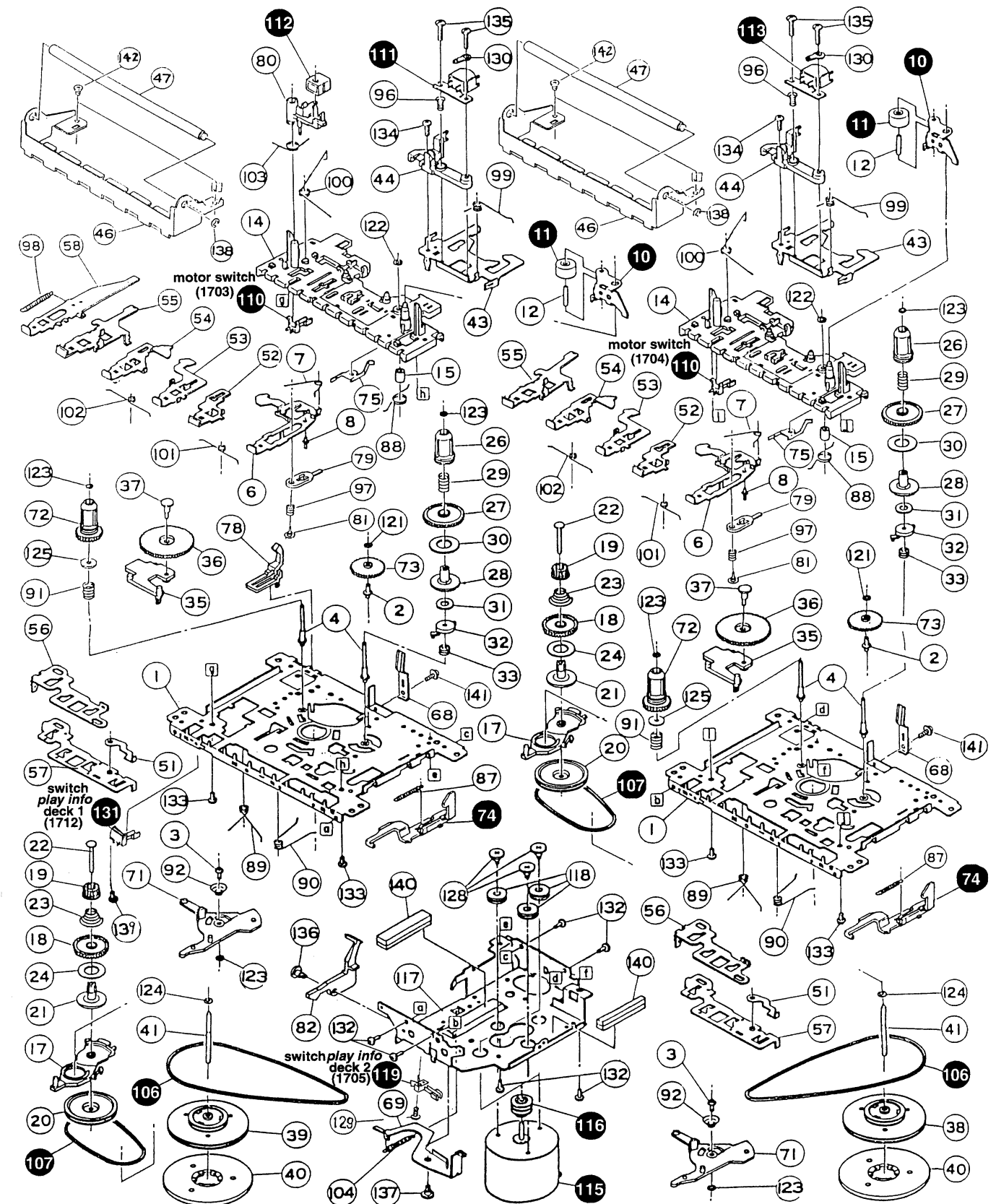
ALIGNMENT of AZIMUTH

- Remove ornamental cover of cassette door.
- Use test cassette SBC420 (4822 397 30071).
- Insert test cassette into cassette door.
- Play 10kHz part.
- Adjust left hand screw for max. output and left channel = right channel.



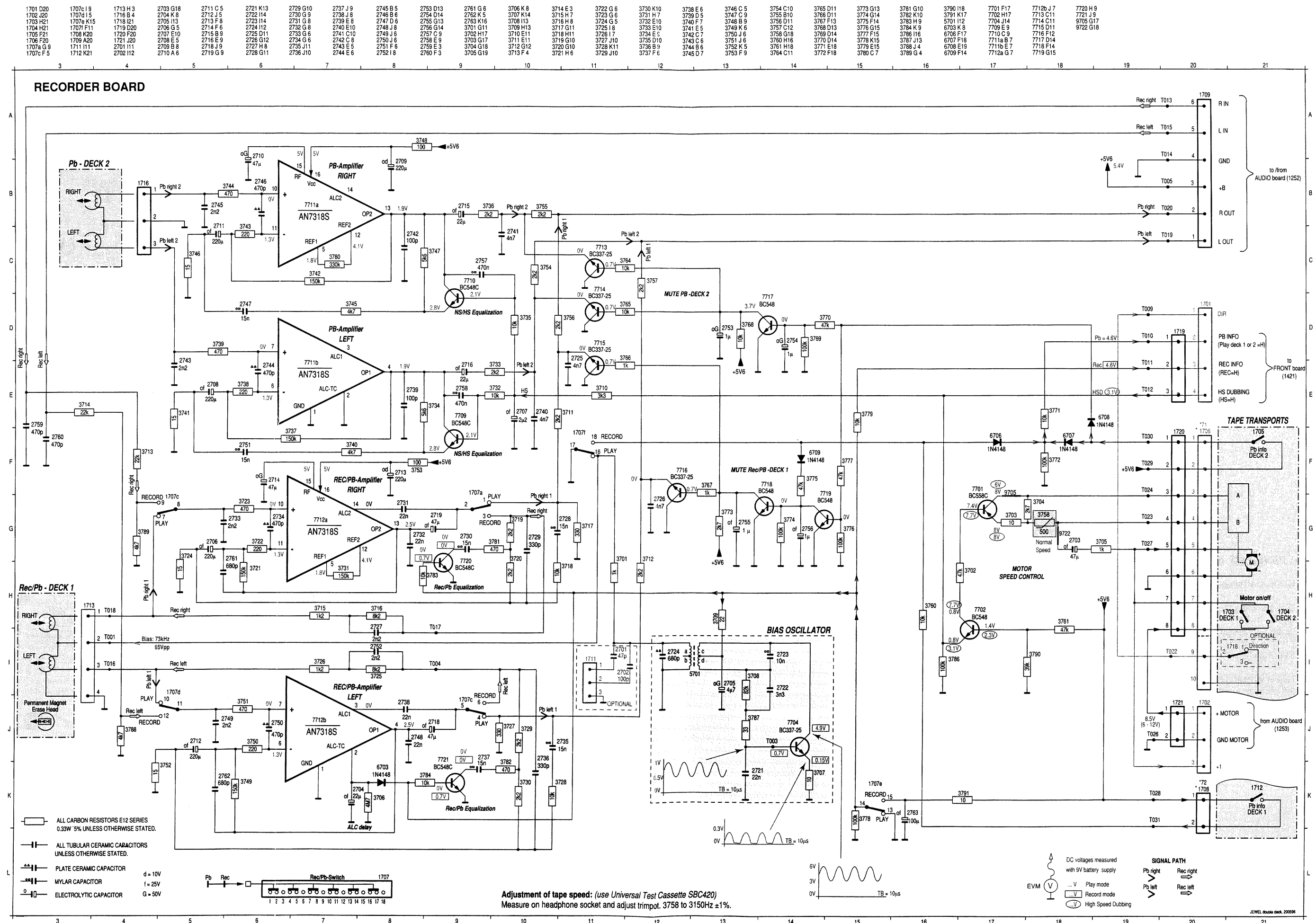
picture 11

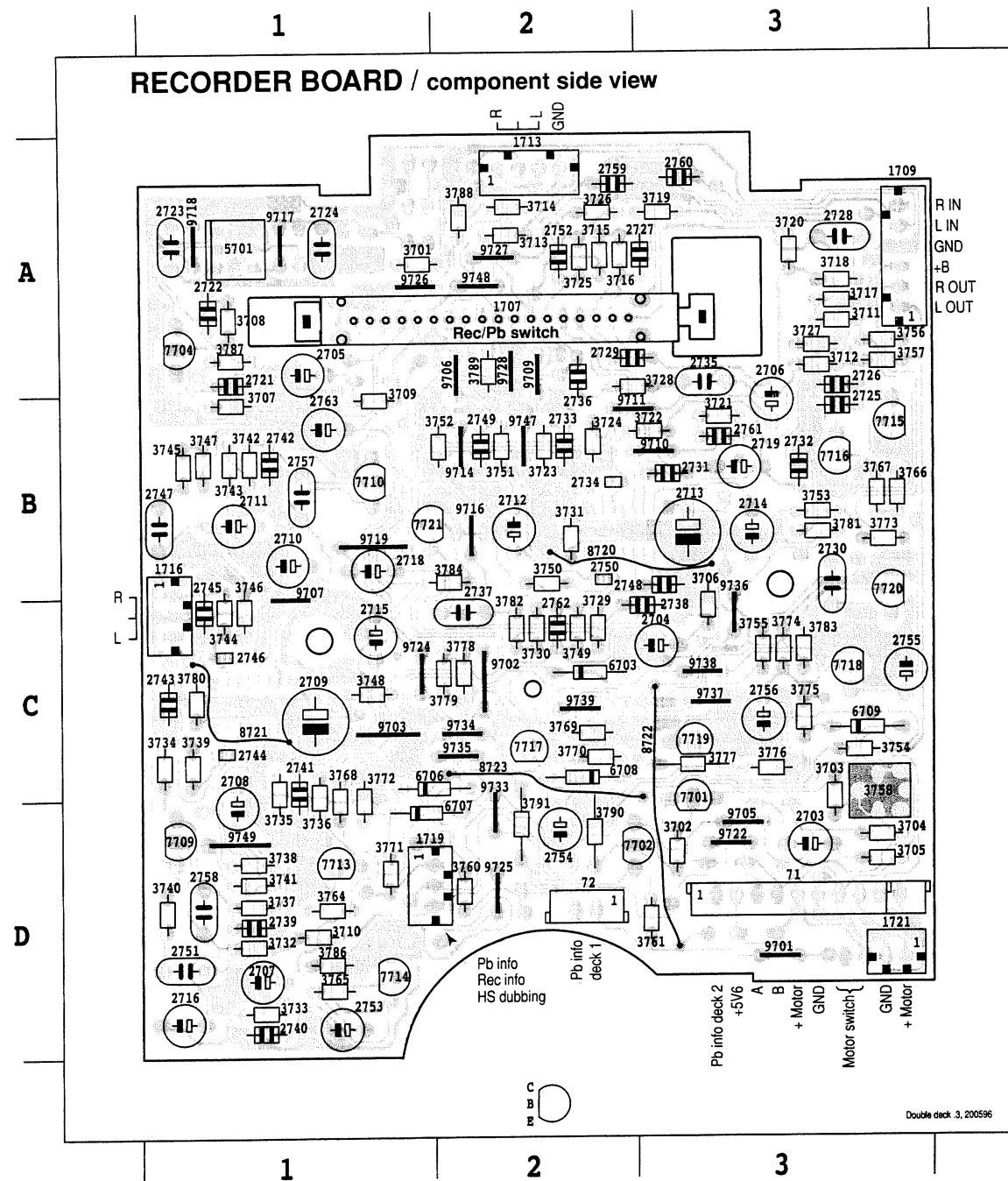
EXPLODED VIEW TAPE TRANSPORT



Only those parts of which a service code number is stated are normal service parts.

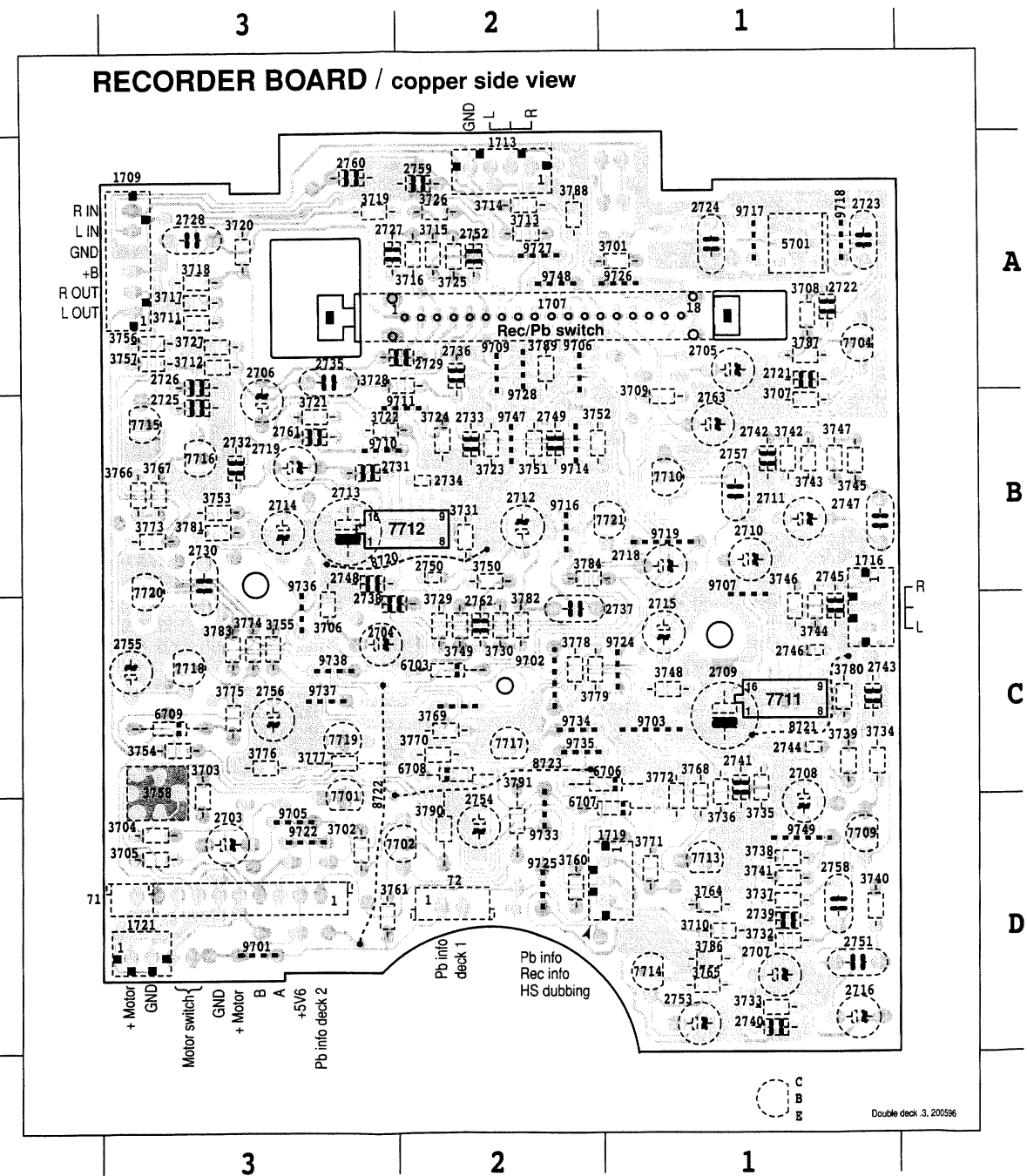
10	4822 528 70849	PINCH ROLLER ARM	112	4822 249 40306	ERASE HEAD, TDK6PA
11	4822 528 70695	PINCH ROLLER ASSY	113	4822 249 10397	REC/PB-HEAD, MS15R-AA2N1
74	4822 403 30792	EJECT HOOK	115	4822 361 21592	MOTOR, EG-530YD-9BH
106	4822 358 31125	MAIN BELT	116	4822 528 81493	MOTOR PULLEY
107	4822 358 31124	SUB BELT	119	4822 276 13494	LEAF SWITCH, INDICAT. PLAY DECK 2
110	4822 278 90663	LEAF SWITCH, MOTOR ON/OFF	131	4822 276 13712	LEAF SWITCH, INDICAT. PLAY DECK 1
111	4822 249 10397	REC/PB-HEAD, MS15R-AA2N1			





This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partlist.

71 D 3	2753 D 1	3746 C 1	7714 D 1
72 D 2	2754 D 2	3747 B 1	7715 B 3
1707 A 2	2755 C 3	3748 C 1	7716 B 3
1709 A 3	2756 C 3	3749 C 2	7717 C 2
1713 A 2	2757 B 1	3750 B 2	7718 C 3
1716 C 1	2758 D 1	3751 B 2	7719 C 3
1719 D 1	2759 A 2	3752 B 2	7720 B 3
1721 D 3	2760 A 3	3753 B 3	7721 B 1
2703 D 3	2761 B 3	3754 C 3	9701 D 3
2704 C 3	2762 C 2	3755 C 3	9702 C 2
2705 A 1	2763 B 1	3756 A 3	9703 C 1
2706 B 3	3701 A 1	3757 A 3	9705 D 3
2707 D 1	3702 D 3	3758 C 3	9706 A 2
2708 D 1	3703 D 3	3760 D 2	9707 C 1
2709 C 1	3704 D 3	3761 D 3	9709 A 2
2710 B 1	3705 D 3	3764 D 1	9710 B 3
2711 B 1	3706 C 3	3765 D 1	9711 B 2
2712 B 2	3707 B 1	3766 B 3	9714 B 2
2713 B 3	3708 A 1	3767 B 3	9716 B 2
2714 B 3	3709 B 1	3768 D 1	9717 A 1
2715 C 1	3710 D 1	3769 C 2	9718 A 1
2716 D 1	3711 A 3	3770 C 2	9719 B 1
2718 B 1	3712 A 3	3771 D 1	9722 D 3
2719 B 3	3713 A 2	3772 D 1	9724 C 1
2721 A 1	3714 A 2	3773 B 3	9725 D 2
2722 A 1	3715 A 2	3774 C 3	9726 A 1
2723 A 1	3716 A 2	3775 C 3	9727 A 2
2724 A 1	3717 A 3	3776 C 3	9728 A 2
2725 B 3	3718 A 3	3777 C 3	9733 D 2
2726 A 3	3719 A 3	3778 C 2	9734 C 2
2727 A 3	3720 A 3	3779 C 2	9735 C 2
2728 A 3	3721 B 3	3780 C 1	9736 C 3
2729 A 2	3722 B 3	3781 B 3	9737 C 3
2730 B 3	3723 B 2	3782 C 2	9738 C 3
2731 B 3	3724 B 2	3783 C 3	9739 C 2
2732 B 3	3725 A 2	3784 B 2	9747 B 2
2733 B 2	3726 A 2	3786 D 1	9748 A 2
2734 B 2	3727 A 3	3787 A 1	9749 D 1
2735 A 3	3728 A 2	3788 A 2	8720 B 2
2736 A 2	3729 C 2	3789 A 2	8721 C 1
2737 C 2	3730 C 2	3790 D 2	8722 C 3
2738 C 3	3731 B 2	3791 D 2	8723 C 2
2739 D 1	3732 D 1	5701 A 1	
2740 D 1	3733 D 1	6703 C 2	
2741 C 1	3734 C 1	6706 C 1	
2742 B 1	3735 C 1	6707 D 1	
2743 C 1	3736 C 1	6708 C 2	
2744 C 1	3737 D 1	6709 C 3	
2745 C 1	3738 D 1	7701 D 3	
2746 C 1	3739 C 1	7702 D 2	
2747 B 1	3740 D 1	7704 A 1	
2748 B 3	3741 D 1	7709 D 1	
2749 B 2	3742 B 1	7710 B 1	
2750 B 2	3743 B 1	7711 C 1	
2751 D 1	3744 C 1	7712 B 2	
2752 A 2	3745 B 1	7713 D 1	



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partlist.

ELECTRICAL PARTSLIST RECORDER BOARD

MISCELLANEOUS

1707 4822 277 11504 SWITCH SLIDE, REC/PB

CAPACITORS

2703 4822 124 41397 47µF 20% 25V
2704 4822 124 41596 22µF 20% 50V
2705 4822 124 40246 4,7µF 20% 63V
2706 4822 124 40181 220µF 20% 10V
2707 4822 124 41576 2,2µF 20% 50V

2708 4822 124 40181 220µF 20% 10V
2709 4822 124 80144 220µF 20% 25V
2710 4822 124 41397 47µF 20% 25V
2711 4822 124 40181 220µF 20% 10V
2712 4822 124 40181 220µF 20% 10V

2713 4822 124 80144 220µF 20% 25V
2714 4822 124 41397 47µF 20% 25V
2715 4822 124 41596 22µF 20% 50V
2716 4822 124 41596 22µF 20% 50V
2718 4822 124 41397 47µF 20% 25V

2719 4822 124 41397 47µF 20% 25V
2721 4822 121 43144 22nF 10% 50V
2722 4822 122 10577 3,3nF 10% 16V
2723 4822 121 51304 10nF 10% 50V
2724 5322 122 32052 680pF 10% 50V

2725 4822 126 11714 4,7nF 20%
2726 4822 126 11714 4,7nF 20%
2727 4822 122 10577 3,3nF 10% 16V
2728 4822 121 51305 15nF 10% 50V
2729 4822 126 12787 330pF 10% 50V

2730 4822 121 51305 15nF 10% 50V
2731 4822 126 11585 22nF 20% 50V
2732 4822 126 11585 22nF 20% 50V
2733 4822 126 12339 2,2nF 10% 16V
2734 5322 122 32311 470pF 10% 100V

2735 4822 121 51305 15nF 10% 50V
2736 4822 126 12787 330pF 10% 50V
2737 4822 121 51305 15nF 10% 50V
2738 4822 126 11585 22nF 20% 50V
2739 4822 122 33195 100pF 10% 50V

2740 4822 126 11714 4,7nF 20%
2741 4822 126 11714 4,7nF 20%
2742 4822 122 33195 100pF 10% 50V
2743 4822 126 12339 2,2nF 10% 16V
2744 5322 122 32311 470pF 10% 100V

2745 4822 126 12339 2,2nF 10% 16V
2746 5322 122 32311 470pF 10% 100V
2747 4822 121 51305 15nF 10% 50V
2748 4822 126 11585 22nF 20% 50V
2749 4822 126 12339 2,2nF 10% 16V

2750 5322 122 32311 470pF 10% 100V
2751 4822 121 51305 15nF 10% 50V
2752 4822 122 10577 3,3nF 10% 16V
2753 4822 124 40242 1µF 20% 63V
2754 4822 124 40242 1µF 20% 63V

2755 4822 124 40242 1µF 20% 63V
2756 4822 124 40242 1µF 20% 63V
2757 4822 121 51252 470nF 5% 63V
2758 4822 121 51252 470nF 5% 63V
2759 4822 122 33519 470pF 10% 50V

2760 4822 122 33519 470pF 10% 50V
2761 4822 122 33169 680pF 10% 50V
2762 4822 122 33169 680pF 10% 50V
2763 4822 124 41584 100µF 20% 10V

RESISTORS

3701 4822 116 83863 1kΩ 5% 0,5W
3702 4822 116 52284 47kΩ 5% 0,5W
3703 4822 116 52176 10Ω 5% 0,5W
3704 4822 116 52263 2,7kΩ 5% 0,5W
3705 4822 116 83863 1kΩ 5% 0,5W

3706 4822 111 30893 4,7MΩ 5% 0,2W
3707 4822 116 52176 10Ω 5% 0,5W
3708 4822 116 52304 82kΩ 5% 0,5W
3709 4822 116 52186 22Ω 5% 0,5W
3710 4822 116 52263 2,7kΩ 5% 0,5W

3711 4822 116 52256 2,2kΩ 5% 0,16W
3712 4822 116 52256 2,2kΩ 5% 0,16W
3713 4822 116 52257 22kΩ 5% 0,5W
3714 4822 116 52257 22kΩ 5% 0,5W
3715 4822 116 52207 1,2kΩ 5% 0,5W

3716 4822 116 52303 8,2kΩ 5% 0,5W
3717 4822 116 52219 330Ω 5% 0,5W
3718 4822 116 83864 10kΩ 5% 0,5W
3719 4822 116 52256 2,2kΩ 5% 0,16W
3720 4822 116 52256 2,2kΩ 5% 0,16W

3721 4822 116 52245 150kΩ 5% 0,16W
3722 4822 116 83872 220Ω 5% 0,5W
3723 4822 116 52224 470Ω 5% 0,5W
3724 4822 116 52182 15Ω 5% 0,5W
3725 4822 116 52303 8,2kΩ 5% 0,5W

3726 4822 116 52207 1,2kΩ 5% 0,5W
3727 4822 116 52219 330Ω 5% 0,5W
3728 4822 116 83864 10kΩ 5% 0,5W
3729 4822 116 52256 2,2kΩ 5% 0,16W
3730 4822 116 52256 2,2kΩ 5% 0,16W

3731 4822 116 52245 150kΩ 5% 0,16W
3732 4822 116 83864 10kΩ 5% 0,5W
3733 4822 116 52256 2,2kΩ 5% 0,16W
3734 4822 116 52289 5,6kΩ 5% 0,16W
3735 4822 116 83864 10kΩ 5% 0,5W

3736 4822 116 52256 2,2kΩ 5% 0,16W
3737 4822 116 52245 150kΩ 5% 0,16W
3738 4822 116 83872 220Ω 5% 0,5W
3739 4822 116 52224 470Ω 5% 0,5W
3740 4822 116 52283 4,7kΩ 5% 0,5W

3741 4822 116 52182 15Ω 5% 0,5W
3742 4822 116 52245 150kΩ 5% 0,16W
3743 4822 116 83872 220Ω 5% 0,5W
3744 4822 116 52224 470Ω 5% 0,5W
3745 4822 116 52283 4,7kΩ 5% 0,5W

3746 4822 116 52182 15Ω 5% 0,5W
3747 4822 116 52289 5,6kΩ 5% 0,16W
3748 4822 116 52175 100Ω 5% 0,5W
3749 4822 116 52245 150kΩ 5% 0,16W
3750 4822 116 83872 220Ω 5% 0,5W

3751 4822 116 52224 470Ω 5% 0,5W
3752 4822 116 52182 15Ω 5% 0,5W
3753 4822 116 52175 100Ω 5% 0,5W
3754 4822 116 52256 2,2kΩ 5% 0,16W
3755 4822 116 52256 2,2kΩ 5% 0,16W

3756 4822 116 52256 2,2kΩ 5% 0,16W
3757 4822 116 52256 2,2kΩ 5% 0,16W
3758 4822 100 20165 500Ω TRIMPOT. LIN.
3760 4822 116 83864 10kΩ 5% 0,5W
3764 4822 116 83864 10kΩ 5% 0,5W

3765 4822 116 83864 10kΩ 5% 0,5W
3766 4822 116 83863 1kΩ 5% 0,5W

RESISTORS

3767 4822 116 83863 1kΩ 5% 0,5W
3768 4822 116 83864 10kΩ 5% 0,5W
3769 4822 116 52234 100kΩ 5% 0,5W
3770 4822 116 52284 47kΩ 5% 0,5W
3771 4822 116 83864 10kΩ 5% 0,5W

3772 4822 116 52234 100kΩ 5% 0,5W
3773 4822 116 52263 2,7kΩ 5% 0,5W
3774 4822 116 52234 100kΩ 5% 0,5W
3775 4822 116 52284 47kΩ 5% 0,5W
3776 4822 116 52234 100kΩ 5% 0,5W

3777 4822 116 52284 47kΩ 5% 0,5W
3778 4822 116 52234 100kΩ 5% 0,5W
3779 4822 116 83864 10kΩ 5% 0,5W
3780 4822 116 52272 330kΩ 5% 0,5W
3781 4822 116 52224 470Ω 5% 0,5W

3782 4822 116 52224 470Ω 5% 0,5W
3783 4822 116 83864 10kΩ 5% 0,5W
3784 4822 116 83864 10kΩ 5% 0,5W
3786 4822 116 52234 100kΩ 5% 0,5W
3787 4822 116 52191 33Ω 5% 0,5W

3788 4822 116 52283 4,7kΩ 5% 0,5W
3789 4822 116 52283 4,7kΩ 5% 0,5W
3790 4822 116 83882 39kΩ 5% 0,5W
3791 4822 116 52176 10Ω 5% 0,5W

COILS

5701 4822 157 10371 OSC. COIL VAR. 100kHz

DIODES

6703 4822 130 30621 1N4148
6706 4822 130 30621 1N4148
6707 4822 130 30621 1N4148
6708 4822 130 30621 1N4148
6709 4822 130 30621 1N4148

TRANSISTORS

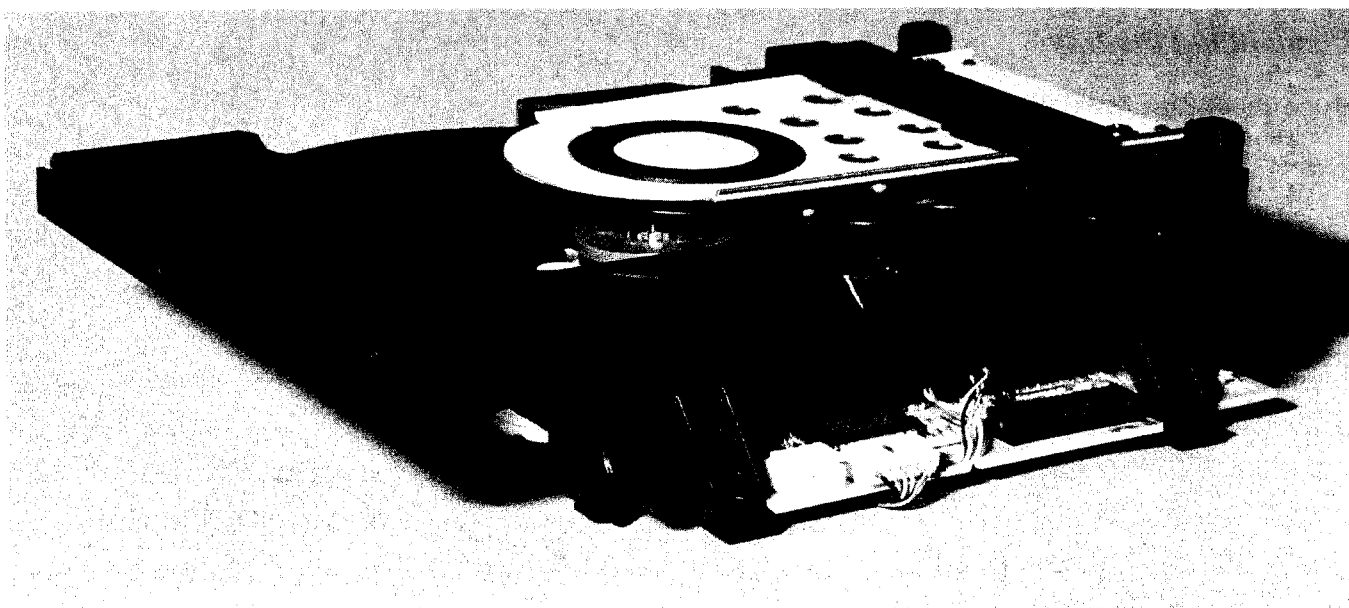
7701 5322 130 60068 BC558C
7702 4822 130 40938 BC548
7704 4822 130 40981 BC337-25
7709 4822 130 44196 BC548C
7710 4822 130 44196 BC548C

7713 4822 130 40981 BC337-25
7714 4822 130 40981 BC337-25
7715 4822 130 40981 BC337-25
7716 4822 130 40981 BC337-25
7717 4822 130 40938 BC548

7718 4822 130 40938 BC548
7719 4822 130 40938 BC548
7720 4822 130 44196 BC548C
7721 4822 130 44196 BC548C

INTEGRATED CIRCUITS

7711 © 4822 209 32918 AN7318S, Rec/Pb-AMPLIFIER IC
7712 © 4822 209 32918 AN7318S, Rec/Pb-AMPLIFIER IC



ECO SHORT LOADER UNIT

for Portables

TABLE OF CONTENTS

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Dismantling hints CD Short Loader

Dismantling the tray

- a) Press open/close button to open the tray. If the tray doesn't work, use a small screwdriver as shown in Fig.1 point 1 to move the tray outside. After the first centimetre it is possible to pull the tray out by hand.
- b) Release two snaps and remove tray.

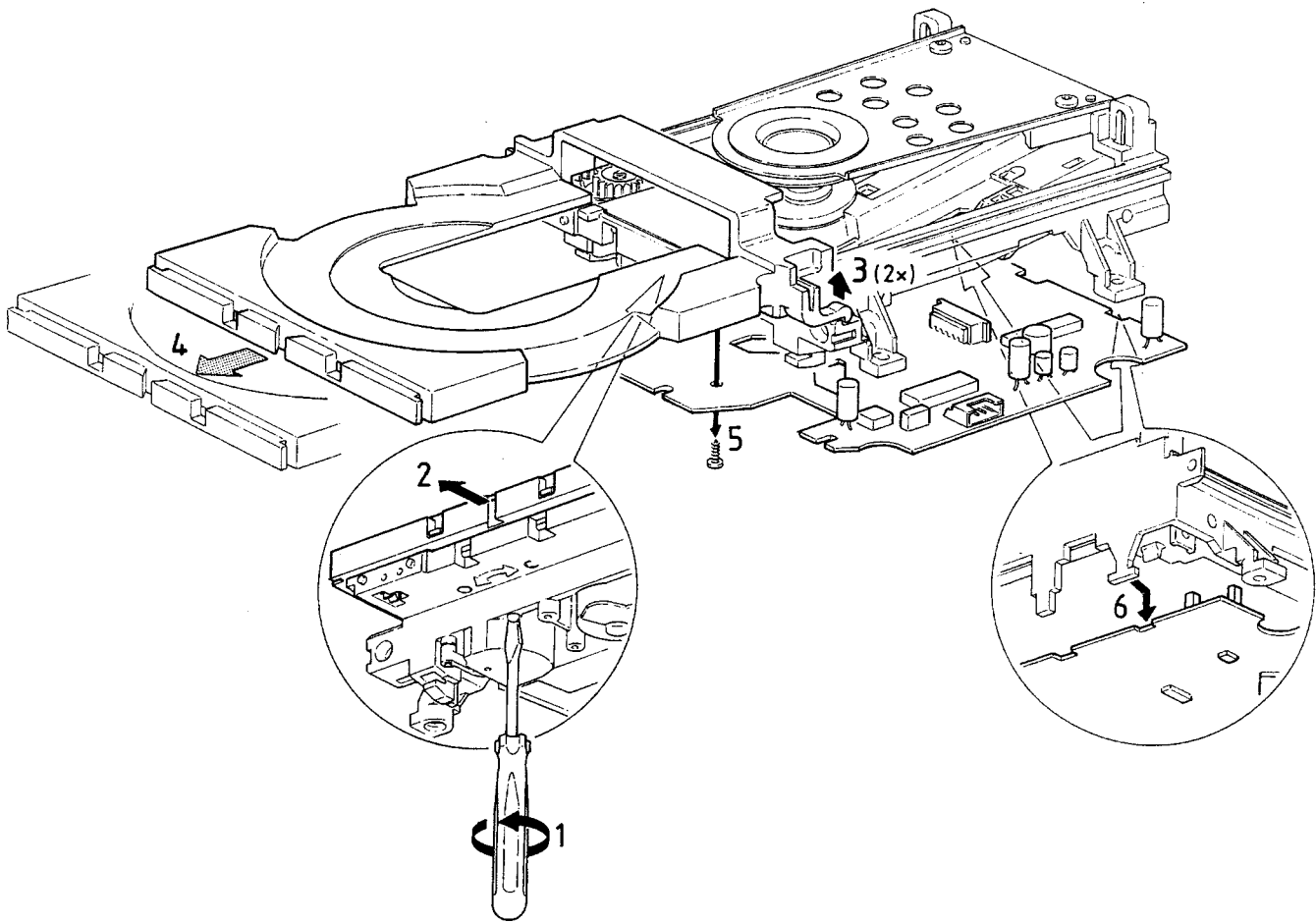


Fig. 1

Assembly of gear

- a) Use a pin (e.g. a paperclip) to align the cam wheel (a) with the gear wheel (b). See Fig. 2.
- b) Fix the wheels with the small plastic washers.

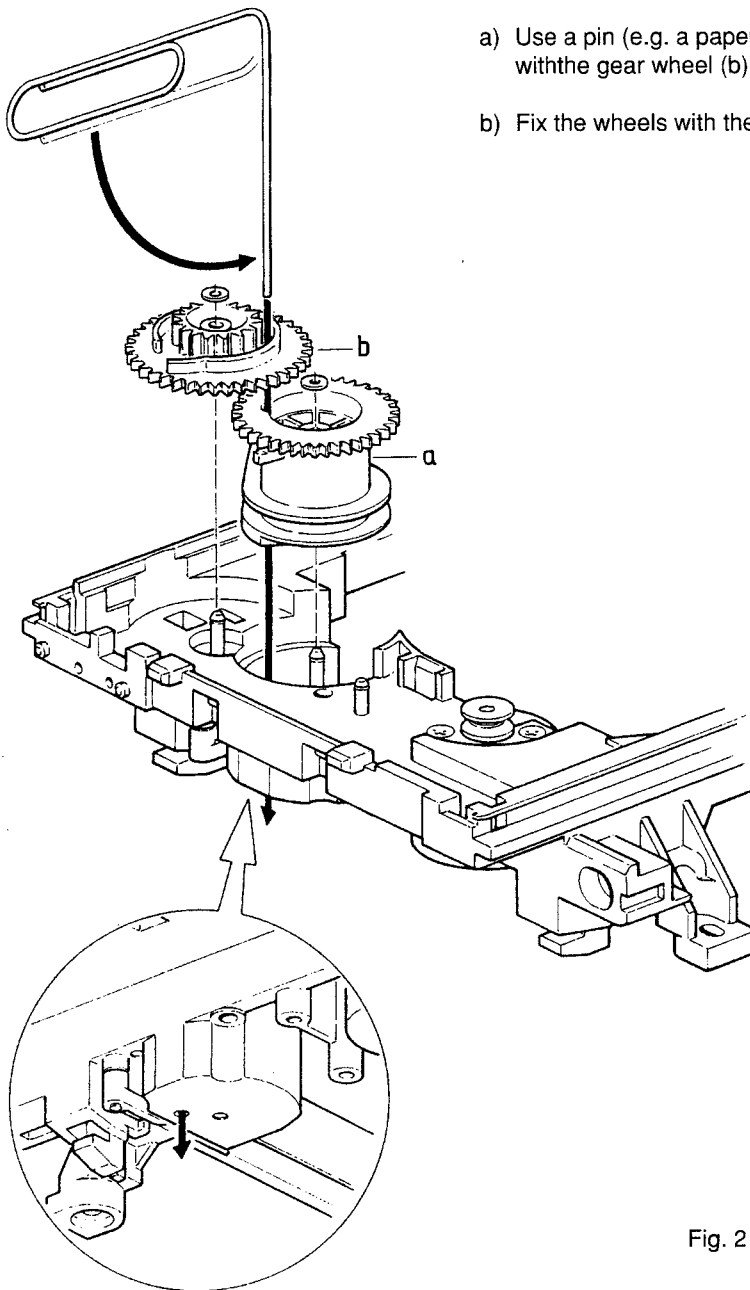


Fig. 2

- c) Mount idle wheel 2 (c) and idle wheel 1 (d) in any position. See Fig. 3.
- d) Fix the idle wheel 1 (d) with the small plastic washer.
- e) Mount the driving belt.

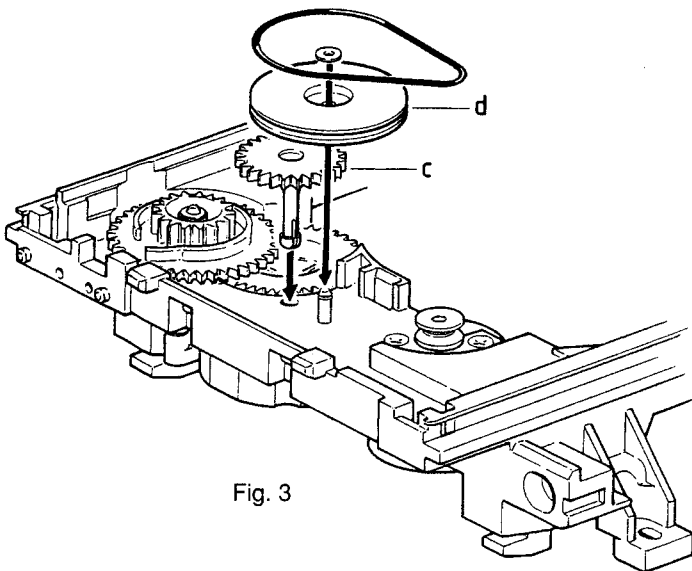


Fig. 3

- f) Mount the pinion guiding assy and the cover as shown in Fig. 4.
- g) Turn the gear wheel (b) counter clockwise to endposition.

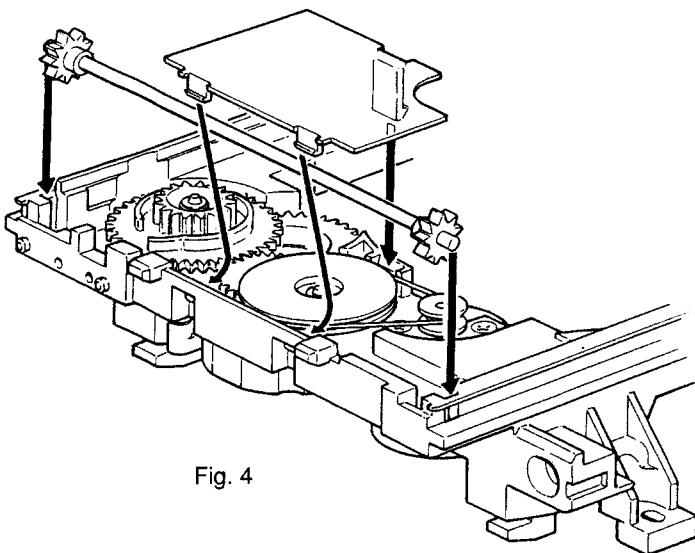


Fig. 4

- h) Mount the CD Mechanism as shown in Fig. 5.
- i) Mount the tray (Align the tray to the chassis and push it inside).

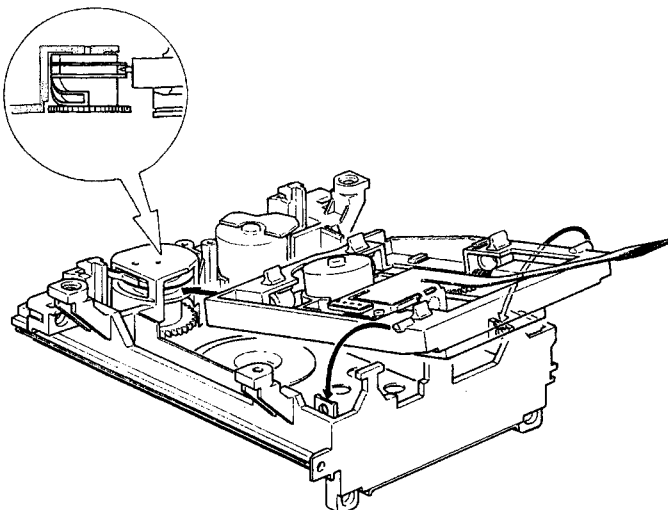


Fig. 5

Check if tray mechanism works correctly!

- 1) Turn the gear wheel (b) clockwise to its endposition (Use a small screwdriver as shown in Fig. 1 point 1).

The tray has to move to inner position first and then the CD mechanism has to move to its upper position.

- 2) Turn the gear wheel (b) counter clockwise to its endposition.

The CD Mechanism has to move to its lower position first and then the tray has to move outside.

BLOCKDIAGRAM CD Module

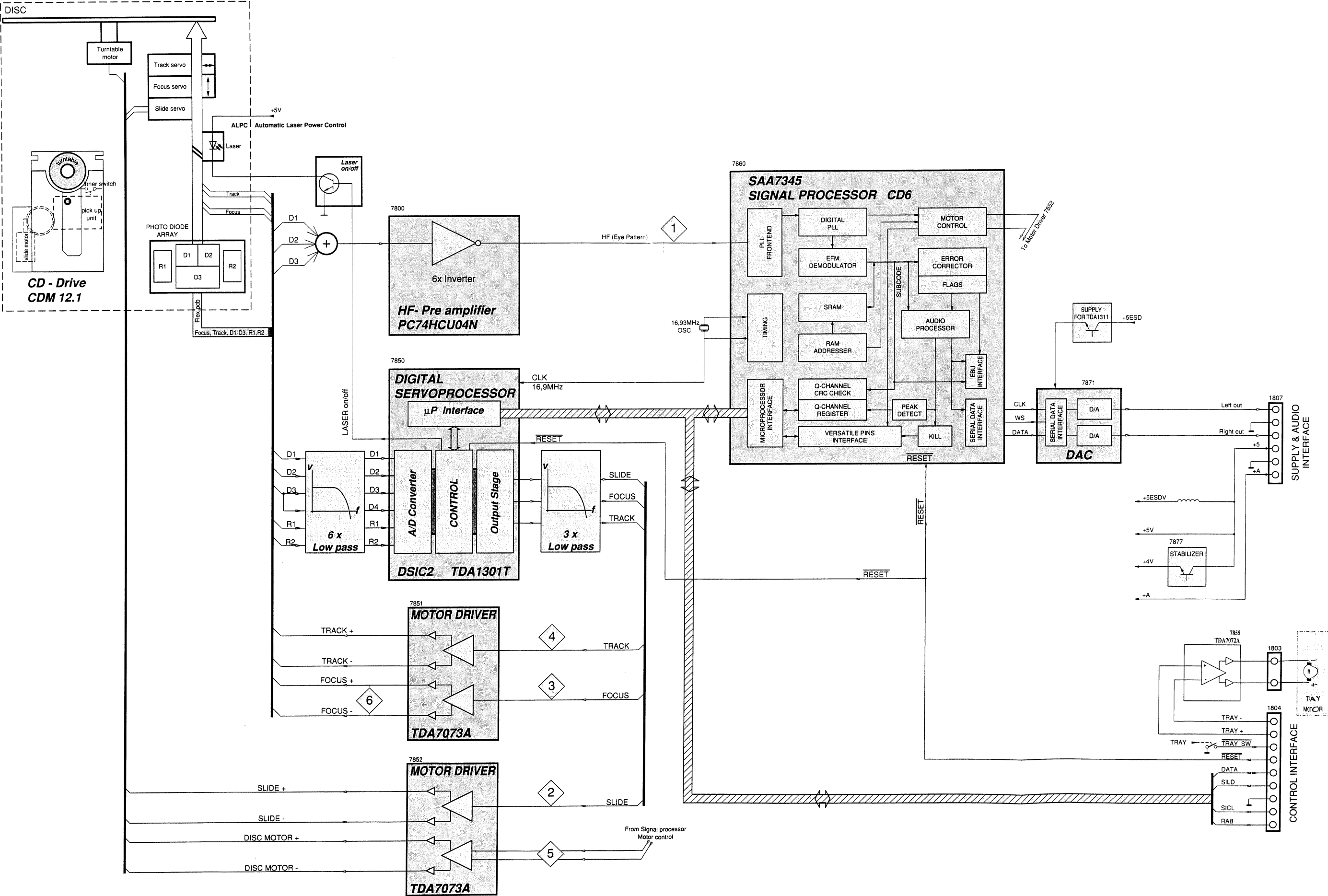
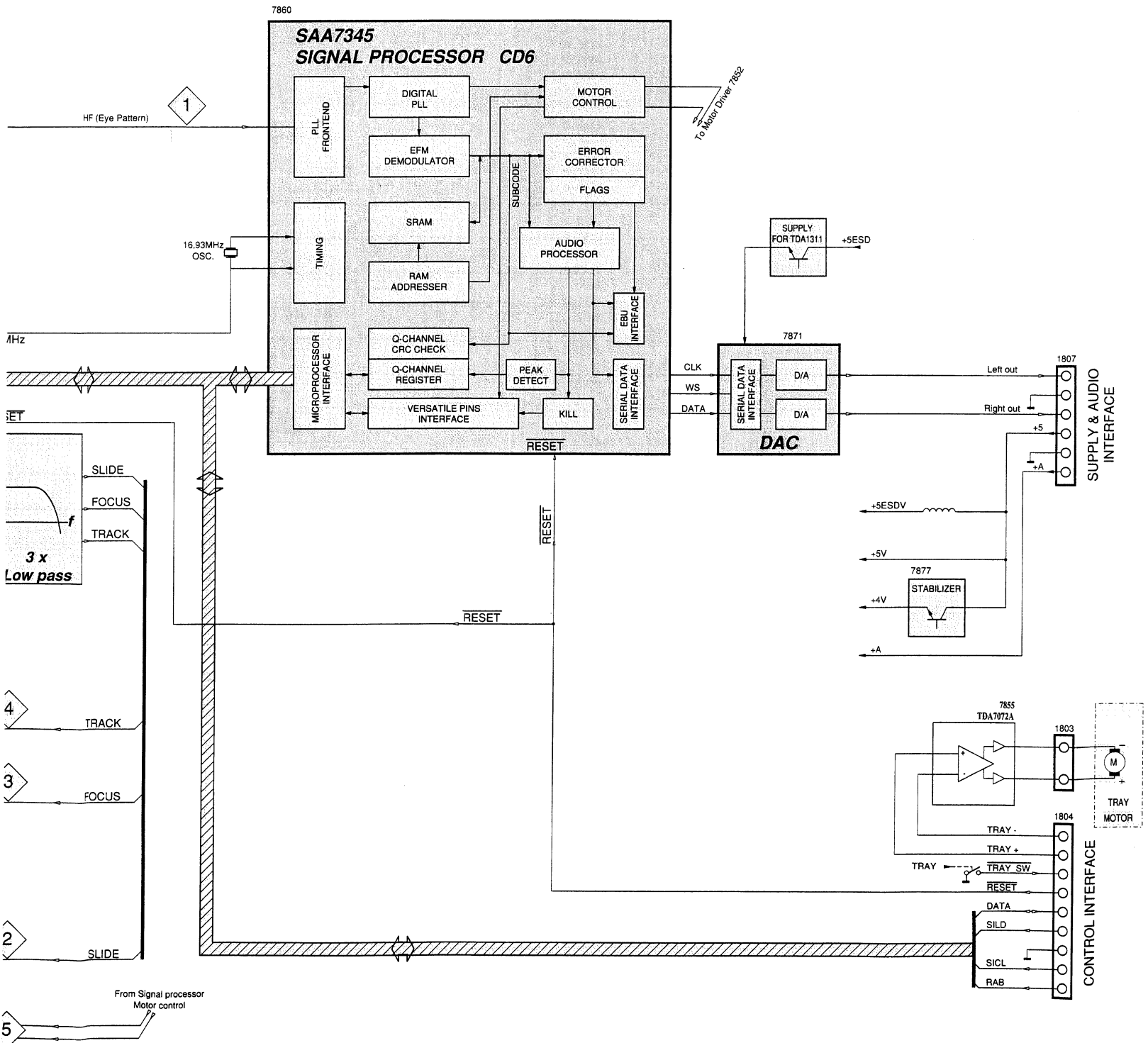


Abb	
DSIC2	
Pin	
1	
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15	
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24	
25	
26	
27	
28	
SIGN	
Pin	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
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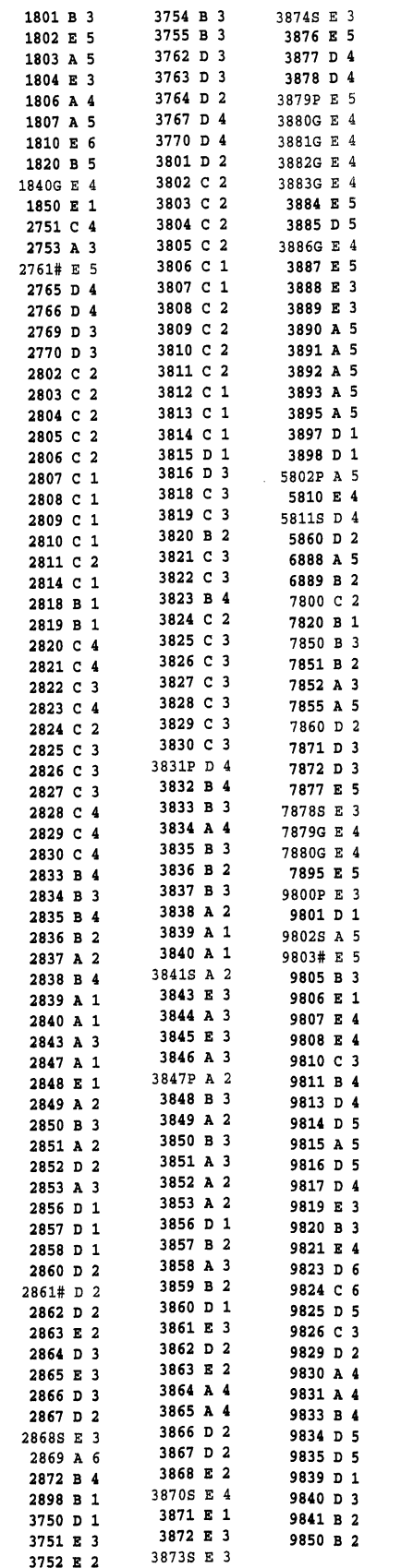
Abbreviations CD Part

DSIC2

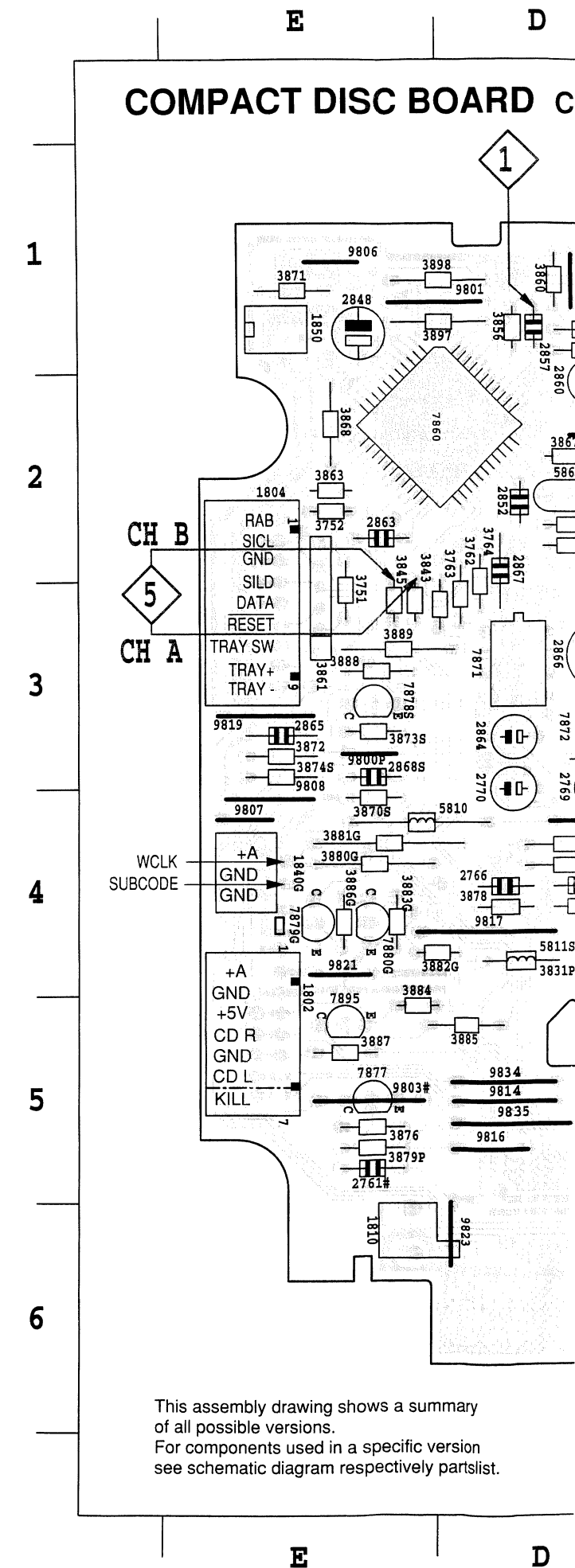
Pin	Name	Direction	Description
1	RESET	$\mu P \rightarrow$ DSIC2	Reset input (Low level is active)
2	Laser on/off	DSIC2 \rightarrow Laser switch	Switches Laser on/off (High level is active)
3	Gnd		Ground (Analogue part)
4	VRH	not connected	Reference input for A/D Converter
5	D1	Diode array \rightarrow DSIC2	Unipolar current input (Central diode signal input)
6	D2	Diode array \rightarrow DSIC2	Unipolar current input (Central diode signal input)
7	D3	Diode array \rightarrow DSIC2	Unipolar current input (Central diode signal input)
8	Vref	Gnd	Reference input for A/D Converter
9	D4	Diode array \rightarrow DSIC2	Unipolar current input (Central diode signal input)
10	R1	Diode array \rightarrow DSIC2	Unipolar current input (Satellite diode signal input)
11	R2	Diode array \rightarrow DSIC2	Unipolar current input (Satellite diode signal input)
12	VDD		Supply for DSIC2 (Analogue part)
13			
14	TS1	Gnd	Test input 1
15	TS2	Gnd	Test input 2
16	OTD	not connected	Off Track Detection (Low level is active)
17	CLO	not connected	Clock output
18	XTLO		Oscillator output pin
19	XTLI		Oscillator input pin
20	VDD		+Supply for DSIC2 (Digital part)
21	Gnd		Ground (Digital part)
22	Track	DSIC2 \rightarrow Servo Driver	Radial actuator output
23	Focus	DSIC2 \rightarrow Servo Driver	Focus actuator output
24	Slide	DSIC2 \rightarrow Servo Driver	Slide motor output
25	SILD	$\mu P \rightarrow$ DSIC2	Serial Interface Load
26	SICL	$\mu P \rightarrow$ DSIC2	Serial Interface Clock
27	SIDA	$\mu P \leftrightarrow$ DSIC2	Serial Interface Data
28	VDD		+Supply for DSIC2 (Digital part)

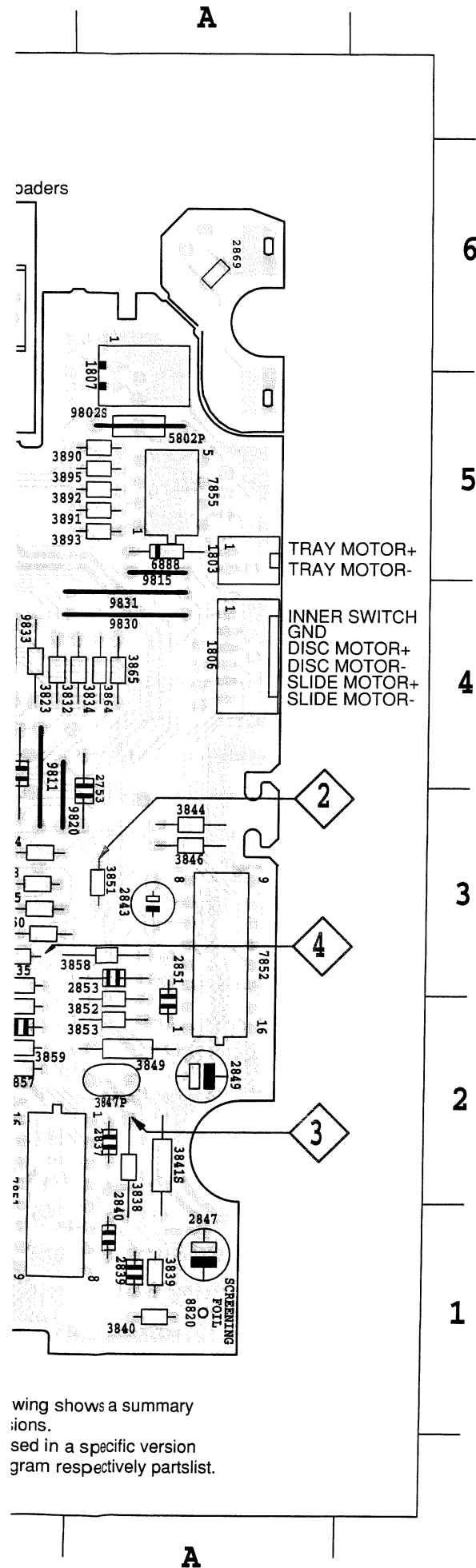
SIGNAL PROCESSOR CD6

Pin	Name	Direction	Description
1	CL11	not connected	11,2896MHz clock output (3-state)
2	DOBM	not connected	digital bi-phase mark output (3-state)
3	V1	\rightarrow Signal processor	Versatile input (used for Version detection)
4	V2	\rightarrow Signal processor	Versatile input (used for inner switch detection)
5	Test2	Gnd	Test input of Signal processor
6	Test1	Gnd	Test input of Signal processor
7	ISLICE	Signal processor \rightarrow Signal processor	Current feedback from internal data slicer
8	HFIN	HF Pre-amp \rightarrow Signal processor	Comparator signal input
9	HFREF	HF Pre-amp \rightarrow Signal processor	Comparator signal input
10	IREF	\rightarrow Signal processor	reference current pin (nom. VDD/2)
11	VDDA		+Supply (analogue) of signal processor
12	VSSA		- Supply (analogue) of signal processor
13	CRIN	X-Tal \rightarrow Signal processor	Crystal/resonator input of signal processor
14	CROUT	Signal processor \rightarrow X-Tal	Crystal/resonator output of signal processor
15	VDD1		+Supply for I/O buffers of signal processor
16	VSS1		- Supply for I/O buffers of signal processor
17	CL16	not connected	16,9344MHz clock output
18	MISC	not connected	General purpose DAC output (3-state)
19	DATA	Signal processor \rightarrow DAC	Serial data output of signal processor (3-state)
20	WCLK	Signal processor \rightarrow DAC	Word clock output of signal processor (3-state)
21	SCLK	Signal processor \rightarrow DAC	Serial bit clock output of signal processor (3-state)
22	MOTOR1	Signal processor \rightarrow Disc motor driver	Motor output1 of signal processor; versatile (3-state)
23	MOTOR2	Signal processor \rightarrow Disc motor driver	Motor output2 of signal processor; versatile (3-state)
24	V5	not connected	Versatile output pin of signal processor
25	V4	not connected	Versatile output pin of signal processor
26	V3	not connected	Versatile output pin of signal processor
27	KILL	not connected	Kill output, programable (open drain)
28	PORE	$\mu P \rightarrow$ Signal processor	Power On Reset enable input (active low)
29	CLA	not connected	4,2336MHz microprocessor clock output
30	DA	$\mu P \leftrightarrow$ Signal processor	Interface data I/O line
31	CL	$\mu P \rightarrow$ Signal processor	Interface clock input line
32	RAB	$\mu P \rightarrow$ Signal processor	Interface R/W and acknowledge input
33	CFLG	Signal processor \rightarrow	Correction flag output (open drain)
34-42	not used		
43	VSS2		Digital supply for internal logic of signal processor
44	VDD2		Digital supply for internal logic of signal processor



xxxxS for System applications only
xxxxP for Portable applications only
xxxxG for CD Graphics versions only
xxxx# provisional only. Not used yet



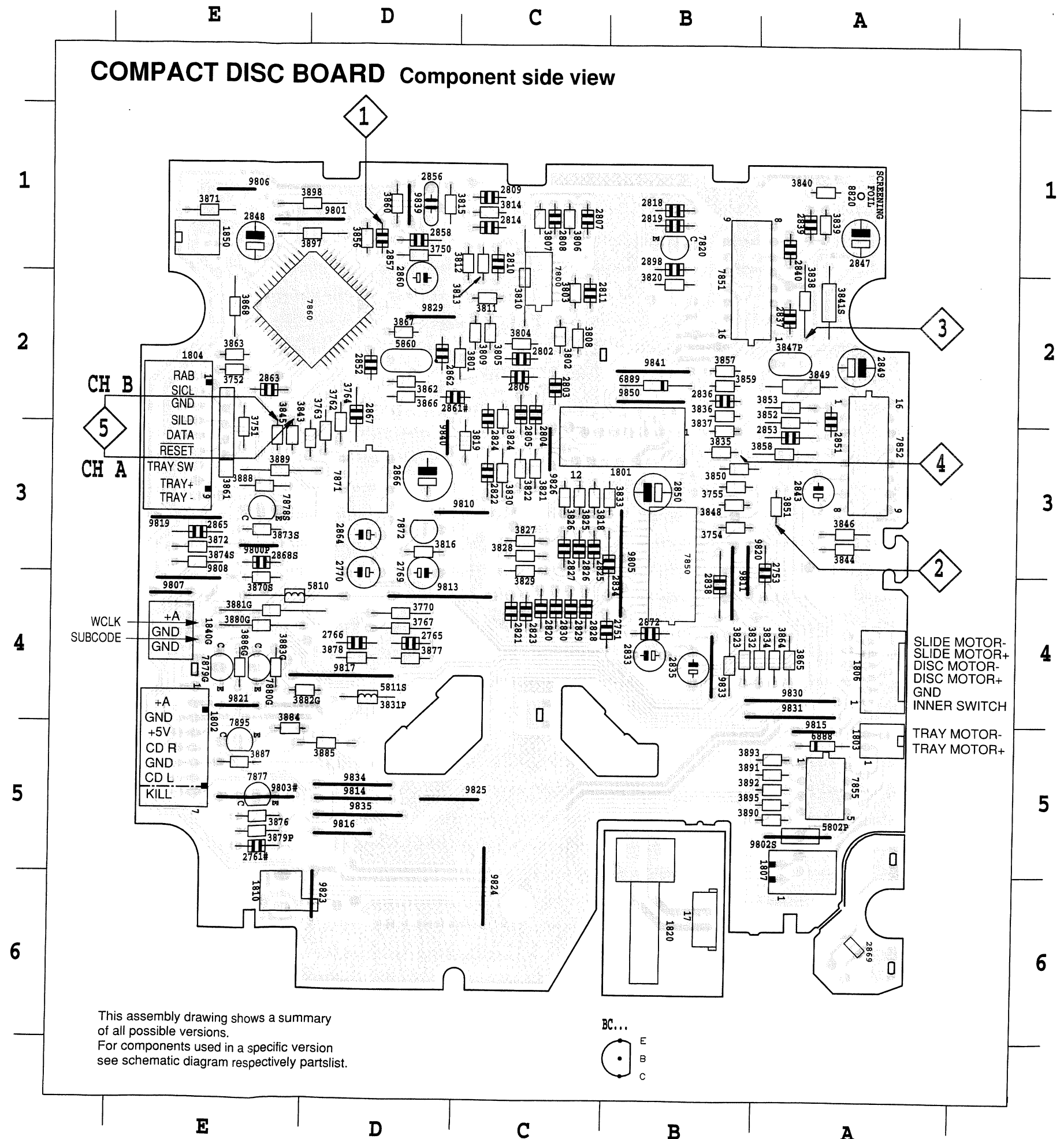


wing shows a summary
ions.
sed in a specific version
gram respectively partslist.

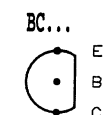
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1802 E 5	3755 B 3	3876 E 5
1803 A 5	3762 D 3	3877 D 4
1804 E 3	3763 D 3	3878 D 4
1806 A 4	3764 D 2	3879P E 5
1807 A 5	3767 D 4	3880G E 4
1810 E 6	3770 D 4	3881G E 4
1820 B 5	3801 D 2	3882G E 4
1840G E 4	3802 C 2	3883G E 4
1850 E 1	3803 C 2	3884 E 5
2751 C 4	3804 C 2	3885 D 5
2753 A 3	3805 C 2	3886G E 4
2761# E 5	3806 C 1	3887 E 5
2765 D 4	3807 C 1	3888 E 3
2766 D 4	3808 C 2	3889 E 3
2769 D 3	3809 C 2	3890 A 5
2770 D 3	3810 C 2	3891 A 5
2802 C 2	3811 C 2	3892 A 5
2803 C 2	3812 C 1	3893 A 5
2804 C 2	3813 C 1	3895 A 5
2805 C 2	3814 C 1	3897 D 1
2806 C 2	3815 D 1	3898 D 1
2807 C 1	3816 D 3	5802P A 5
2808 C 1	3818 C 3	5810 E 4
2809 C 1	3819 C 3	5811S D 4
2810 C 1	3820 B 2	5860 D 2
2811 C 2	3821 C 3	6888 A 5
2814 C 1	3822 C 3	6889 B 2
2818 B 1	3823 B 4	7800 C 2
2819 B 1	3824 C 2	7820 B 1
2820 C 4	3825 C 3	7850 B 3
2821 C 4	3826 C 3	7851 B 2
2822 C 3	3827 C 3	7852 A 3
2823 C 4	3828 C 3	7855 A 5
2824 C 2	3829 C 3	7860 D 2
2825 C 3	3830 C 3	7871 D 3
2826 C 3	3831P D 4	7872 D 3
2827 C 3	3832 B 4	7877 E 5
2828 C 4	3833 B 3	7878S E 3
2829 C 4	3834 A 4	7879G E 4
2830 C 4	3835 B 3	7880G E 4
2833 B 4	3836 B 2	7895 E 5
2834 B 3	3837 B 3	9800P E 3
2835 B 4	3838 A 2	9801 D 1
2836 B 2	3839 A 1	9802S A 5
2837 A 2	3840 A 1	9803# E 5
2838 B 4	3841S A 2	9805 B 3
2839 A 1	3843 E 3	9806 E 1
2840 A 1	3844 A 3	9807 E 4
2843 A 3	3845 E 3	9808 E 4
2847 A 1	3846 A 3	9810 C 3
2848 E 1	3847P A 2	9811 B 4
2849 A 2	3848 B 3	9813 D 4
2850 B 3	3849 A 2	9814 D 5
2851 A 2	3850 B 3	9815 A 5
2852 D 2	3851 A 3	9816 D 5
2853 A 3	3852 A 2	9817 D 4
2856 D 1	3853 A 2	9819 E 3
2857 D 1	3856 D 1	9820 B 3
2858 D 1	3857 B 2	9821 E 4
2860 D 2	3858 A 3	9823 D 6
2861# D 2	3859 B 2	9824 C 6
2862 D 2	3860 D 1	9825 D 5
2863 E 2	3861 E 3	9826 C 3
2864 D 3	3862 D 2	9829 D 2
2865 E 3	3863 E 2	9830 A 4
2866 D 3	3864 A 4	9831 A 4
2867 D 2	3865 A 4	9833 B 4
2868S E 3	3866 D 2	9834 D 5
2869 A 6	3867 D 2	9835 D 5
2872 B 4	3868 E 2	9839 D 1
2898 B 1	3870S E 4	9840 D 3
3750 D 1	3871 E 1	9841 B 2
3751 E 3	3872 E 3	9850 B 2
3752 E 2	3873S E 3	

Version related parts

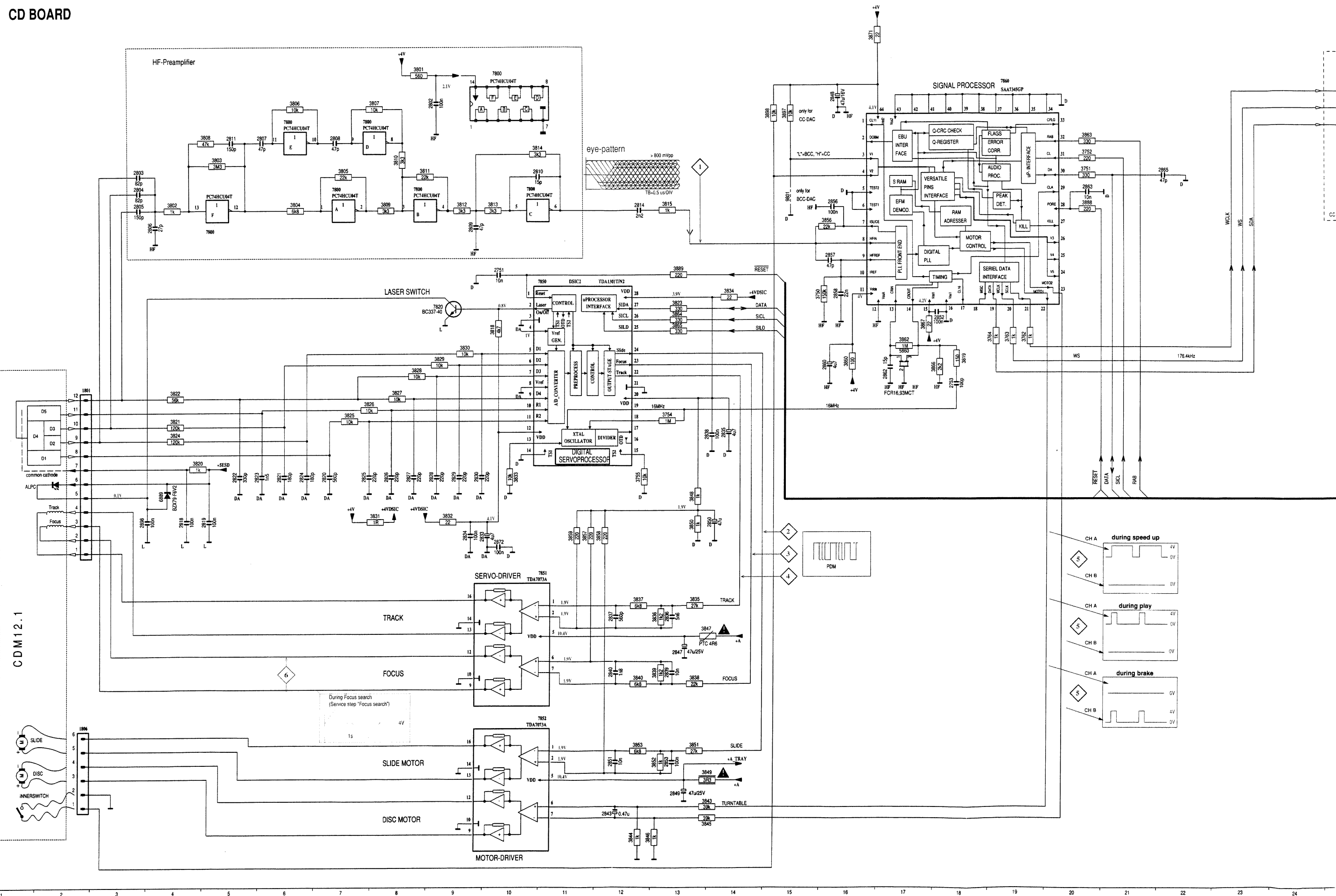
xxxxS for System applications only
xxxxP for Portable applications only
xxxxG for CD Graphics versions only
xxxx# provisional only. Not used yet

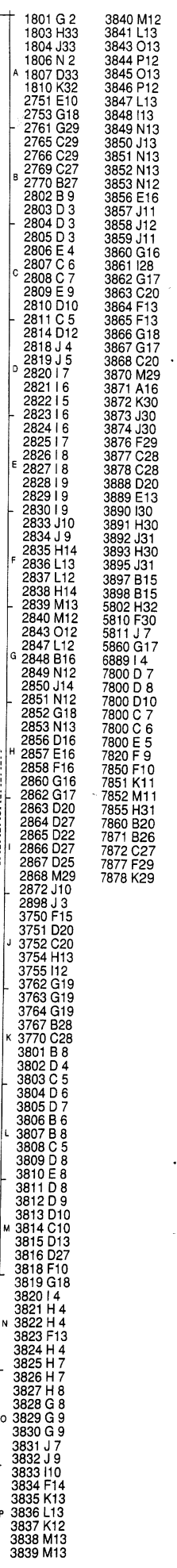


This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.



CD BOARD





WARNING

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CDM-ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

- **SWITCH OFF POWER SUPPLY**
- **ESD PROTECTION**

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps have to be done when replacing the CDM mechanism:

1. Disconnect old CDM flexfoil from printed board
2. Connect paperclip to CDM flexfoil to short-circuit flexfoil (fig.1)
3. Short-circuit printed board with **brass-sheet (4822 321 11197)** plugged into the flexfoil connector (fig.2)
4. Remove old CDM mechanism
5. Position new CDM mechanism in its studs
6. Remove short-circuit from printed board connector
7. Remove short-circuit from flexfoil of new CDM
8. Connect new flexfoil to print connector (fig.3)

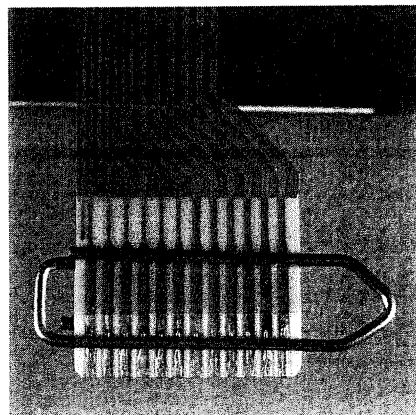


fig.1

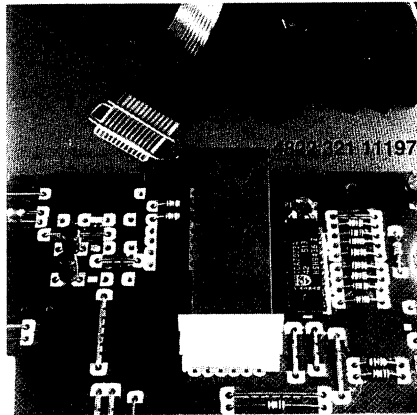


fig.2

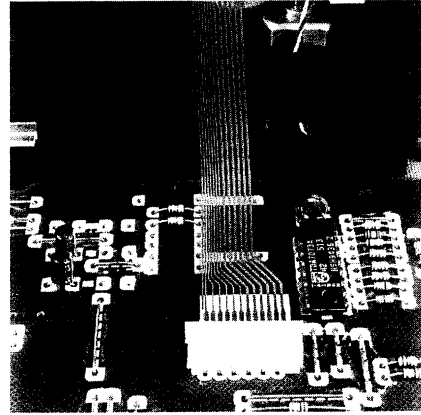
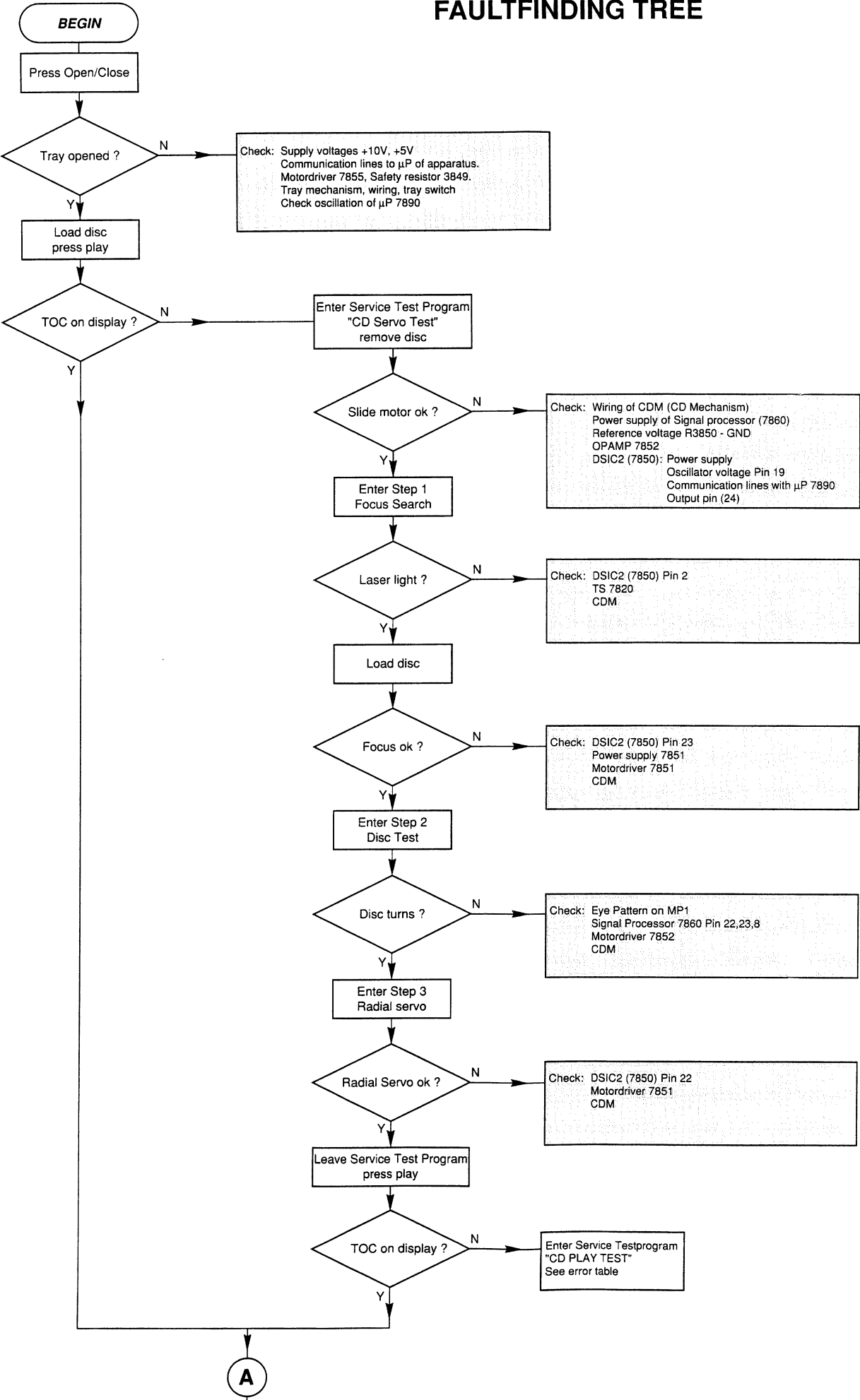


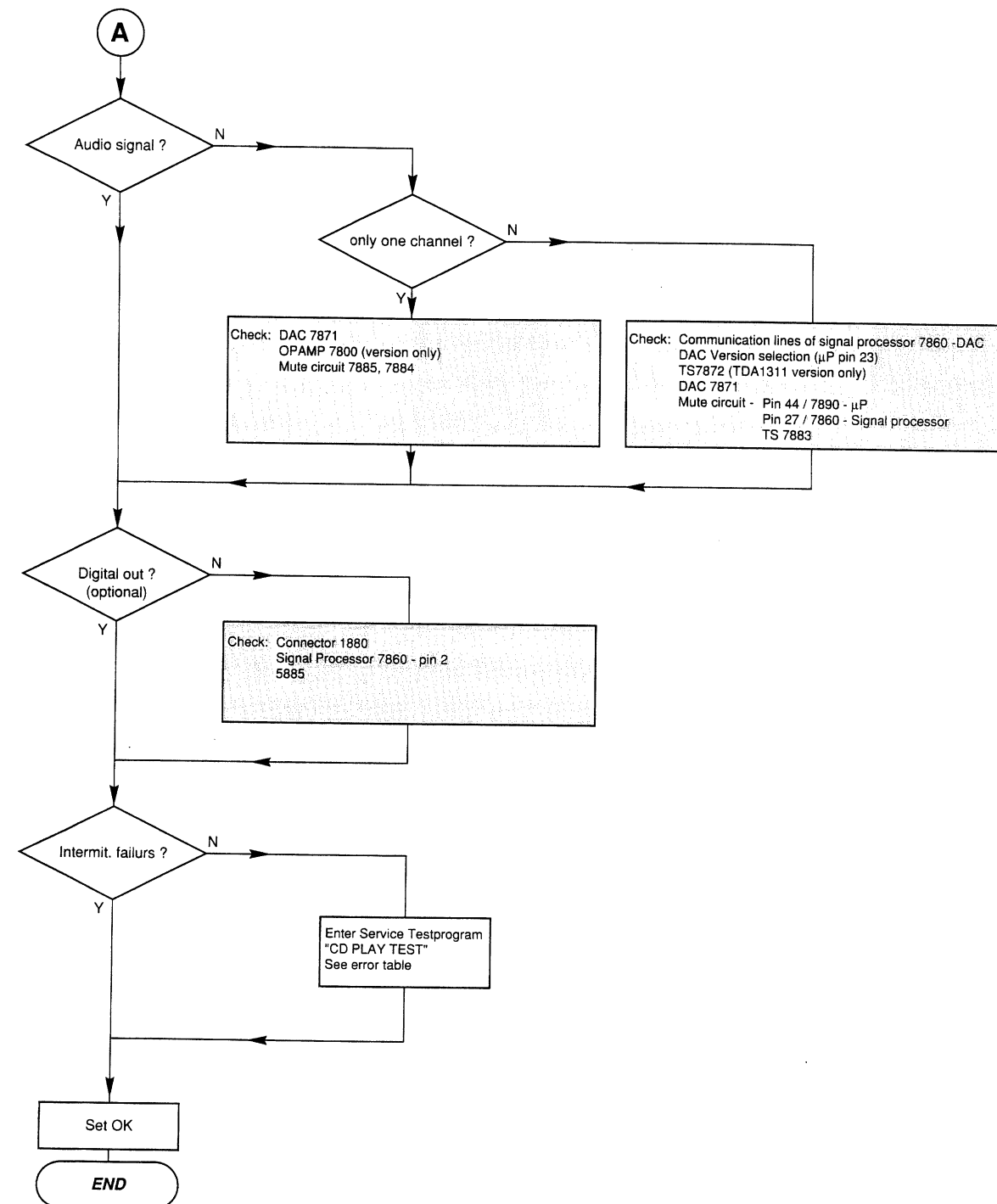
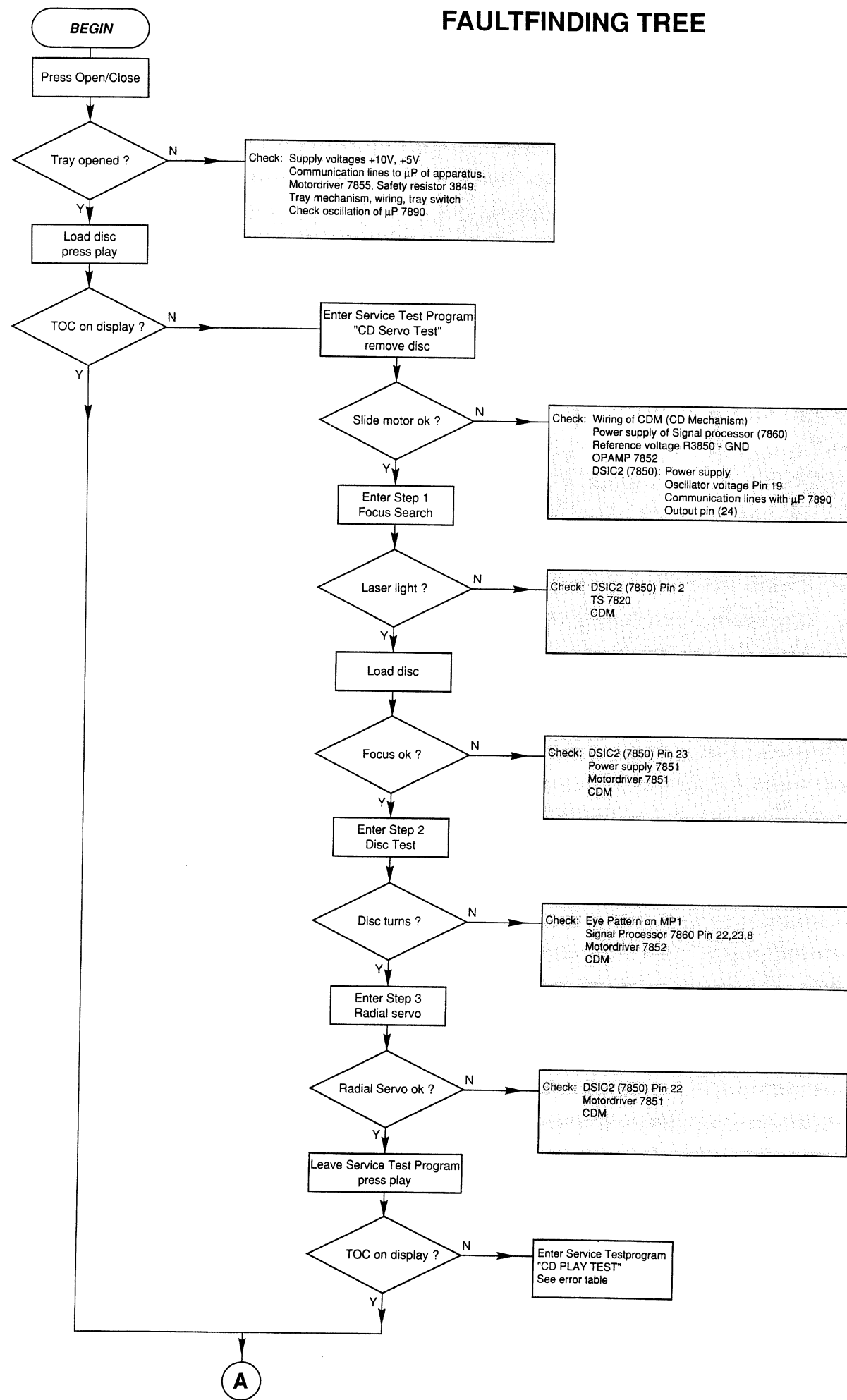
fig.3

Remarks

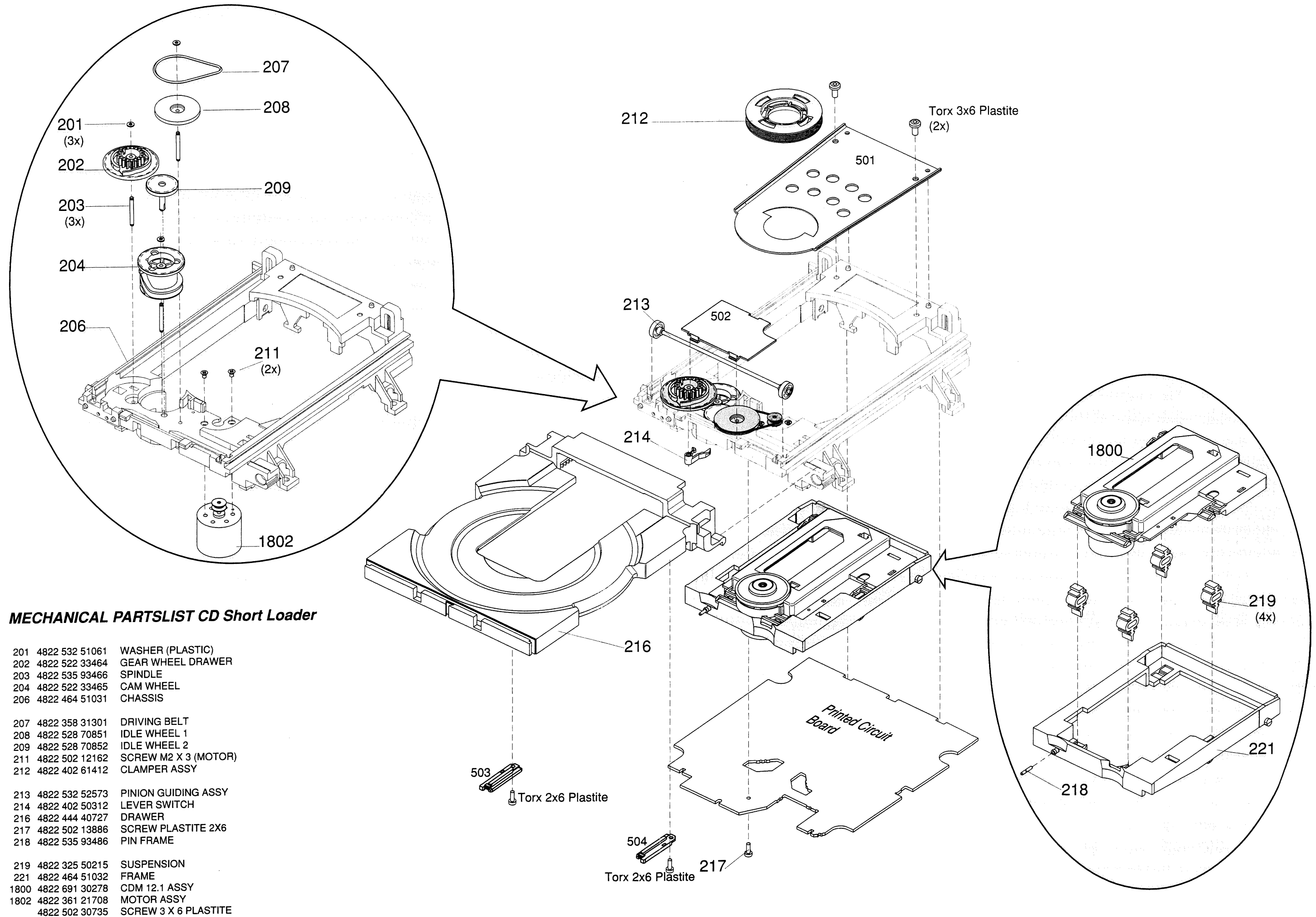
FAULTFINDING TREE



FAULTFINDING TREE



Exploded view CD Short Loader



ELECTRICAL PARTSLIST CD BOARD

MISCELLANEOUS

1810 4822 276 13503 SWITCH, TRAY

CAPACITORS

2751 4822 121 51387 10nF 20% 16V
2753 4822 122 33195 100pF 10% 50V
2765 4822 126 12878 1,5nF 10% 16V
2766 4822 126 12878 1,5nF 10% 16V
2769 4822 124 41969 1µF 20% 50V

2770 4822 124 41969 1µF 20% 50V
2802 4822 126 12882 100nF 20% 50V
2803 4822 122 10319 82pF 5% 50V
2804 4822 122 10319 82pF 5% 50V
2805 4822 122 33849 150pF 10% 50V

2806 4822 122 33192 27pF 5% 50V
2807 4822 122 33848 47pF 5% 50V
2808 4822 122 33848 47pF 5% 50V
2809 4822 122 33848 47pF 5% 50V
2810 4822 122 10462 15pF 5% 50V

2811 4822 122 33849 150pF 10% 50V
2814 4822 126 12339 2,2nF 10% 16V
2818 4822 126 12882 100nF 20% 50V
2819 4822 126 12882 100nF 20% 50V
2820 4822 122 10459 560pF 10% 50V

2821 4822 126 10053 180pF 10% 50V
2822 4822 126 12787 330pF 10% 50V
2823 4822 126 12878 1,5nF 10% 16V
2824 4822 126 10053 180pF 10% 50V
2825 4822 122 10466 220pF 10%

2826 4822 122 10466 220pF 10%
2827 4822 122 10466 220pF 10%
2828 4822 122 10466 220pF 10%
2829 4822 122 10466 220pF 10%
2830 4822 122 10466 220pF 10%

2833 4822 124 23401 4,7µF 20% 25V
2834 4822 126 12882 100nF 20% 50V
2835 4822 124 23401 4,7µF 20% 25V
2836 4822 126 13098 5,6nF 20% 16V
2837 4822 122 10459 560pF 10% 50V

2838 4822 126 12882 100nF 20% 50V
2839 4822 121 51387 10nF 20% 16V
2840 4822 122 10576 1,8nF 10% 16V
2843 5322 124 41948 0,47µF 20% 50V
2847 4822 124 40433 47µF 20% 25V

2848 4822 124 23178 47µF 20% 16V
2849 4822 124 40433 47µF 20% 25V
2850 4822 124 23178 47µF 20% 16V
2851 4822 121 51387 10nF 20% 16V
2852 4822 126 12882 100nF 20% 50V

2853 4822 126 12882 100nF 20% 50V
2856 5322 121 42578 100nF 10% 100V
2857 4822 122 33848 47pF 5% 50V
2858 4822 126 11585 22nF 20% 50V
2860 4822 124 23401 4,7µF 20% 25V

2862 4822 122 10462 15pF 5% 50V
2863 4822 121 51387 10nF 20% 16V
2864 4822 124 23401 4,7µF 20% 25V
2865 4822 122 33848 47pF 5% 50V
2866 4822 124 42446 100µF 20% 10V

CAPACITORS

2867 4822 121 51387 10nF 20% 16V
2869 © 4822 126 11692 1µF 20% 16V
2872 4822 126 12882 100nF 20% 50V
2898 4822 126 12882 100nF 20% 50V

RESISTORS

3750 4822 116 52245 150kΩ 5% 0,16W
3751 4822 116 52219 330Ω 5% 0,5W
3752 4822 116 52215 220Ω 5% 0,16W
3754 4822 116 52235 1MΩ 5% 0,5W
3755 4822 116 83864 10kΩ 5% 0,5W

3762 4822 050 11002 1kΩ 5% 0,2W
3763 4822 050 11002 1kΩ 5% 0,2W
3764 4822 050 11002 1kΩ 5% 0,2W
3767 4822 116 52224 470Ω 5% 0,5W
3770 4822 116 52224 470Ω 5% 0,5W

3801 4822 116 52226 560Ω 5% 0,5W
3802 4822 050 11002 1kΩ 5% 0,2W
3803 4822 111 50499 3,3MΩ 5% 0,2W
3804 4822 116 52296 6,8kΩ 5% 0,5W
3805 4822 116 52257 22kΩ 5% 0,5W

3806 4822 116 83864 10kΩ 5% 0,5W
3807 4822 116 83864 10kΩ 5% 0,5W
3808 4822 116 52284 47kΩ 5% 0,5W
3809 4822 116 52269 3,3kΩ 5% 0,5W
3810 4822 116 52269 3,3kΩ 5% 0,5W

3811 4822 116 52257 22kΩ 5% 0,5W
3812 4822 116 52269 3,3kΩ 5% 0,5W
3813 4822 116 52269 3,3kΩ 5% 0,5W
3814 4822 116 52269 3,3kΩ 5% 0,5W
3815 4822 050 11002 1kΩ 5% 0,2W

3816 4822 116 52283 4,7kΩ 5% 0,5W
3818 4822 116 52283 4,7kΩ 5% 0,5W
3819 4822 116 52211 150Ω 5% 0,5W
3820 4822 050 11002 1kΩ 5% 0,2W
3821 4822 116 52239 120kΩ 5% 0,5W

3822 4822 116 52291 56kΩ 5% 0,5W
3823 4822 116 52219 330Ω 5% 0,5W
3824 4822 116 52239 120kΩ 5% 0,5W
3825 4822 116 83864 10kΩ 5% 0,5W
3826 4822 116 83864 10kΩ 5% 0,5W

3827 4822 116 83864 10kΩ 5% 0,5W
3828 4822 116 83864 10kΩ 5% 0,5W
3829 4822 116 83864 10kΩ 5% 0,5W
3830 4822 116 83864 10kΩ 5% 0,5W
3831 4822 116 80176 1Ω 5% 0,5W

3832 4822 116 52186 22Ω 5% 0,5W
3833 4822 116 83864 10kΩ 5% 0,5W
3834 4822 116 52186 22Ω 5% 0,5W
3835 4822 116 52264 27kΩ 5% 0,5W
3836 4822 116 52207 1,2kΩ 5% 0,5W

3837 4822 116 52296 6,8kΩ 5% 0,5W
3838 4822 116 52257 22kΩ 5% 0,5W
3839 4822 116 52207 1,2kΩ 5% 0,5W
3840 4822 116 52296 6,8kΩ 5% 0,5W
3843 4822 116 83882 39kΩ 5% 0,5W

3844 4822 050 11002 1kΩ 5% 0,2W
3845 4822 116 83882 39kΩ 5% 0,5W
3846 4822 050 11002 1kΩ 5% 0,2W
3847 4822 117 12069 4,6Ω 25% PTC
3848 4822 050 11002 1kΩ 5% 0,2W

ELECTRICAL PARTSLIST CD BOARD

RESISTORS

3849 4822 052 10338 3,3Ω NFR25
3850 4822 050 11002 1kΩ 5% 0,2W
3851 4822 116 52264 27kΩ 5% 0,5W
3852 4822 050 11002 1kΩ 5% 0,2W
3853 4822 116 52296 6,8kΩ 5% 0,5W

3856 4822 116 52257 22kΩ 5% 0,5W
3857 4822 116 52215 220Ω 5% 0,16W
3858 4822 116 52215 220Ω 5% 0,16W
3859 4822 116 52215 220Ω 5% 0,16W
3860 4822 116 52175 100Ω 5% 0,5W

3861 4822 116 90836 RES.NETWORK 5x10kΩ
3862 4822 116 52235 1MΩ 5% 0,5W
3863 4822 116 52219 330Ω 5% 0,5W
3864 4822 116 52219 330Ω 5% 0,5W
3865 4822 116 52219 330Ω 5% 0,5W

3866 4822 116 52256 2,2kΩ 5% 0,16W
3867 4822 116 52186 22Ω 5% 0,5W
3871 4822 116 52186 22Ω 5% 0,5W
3872 4822 116 52175 100Ω 5% 0,5W
3876 4822 116 52213 180Ω 5% 0,5W

3877 4822 116 52284 47kΩ 5% 0,5W
3878 4822 116 52284 47kΩ 5% 0,5W
3879 4822 116 52215 220Ω 5% 0,16W
3888 4822 116 52215 220Ω 5% 0,16W
3889 4822 116 52215 220Ω 5% 0,16W

3890 4822 050 11002 1kΩ 5% 0,2W
3891 4822 050 11002 1kΩ 5% 0,2W
3892 4822 116 52271 33kΩ 5% 0,16W
3893 4822 116 52249 1,8kΩ 5% 0,16W
3895 4822 116 52271 33kΩ 5% 0,16W

3897 4822 116 83864 10kΩ 5% 0,5W
3898 4822 116 83864 10kΩ 5% 0,5W

COILS

5802 4822 157 50964 100µH
5810 4822 152 20677 10µH
5860 4822 242 81865 CER.RES. 16,93MHz

DIODES

6888 4822 130 80655 BZX79-F2V4
6889 4822 130 34167 BZX79-F6V2

TRANSISTORS

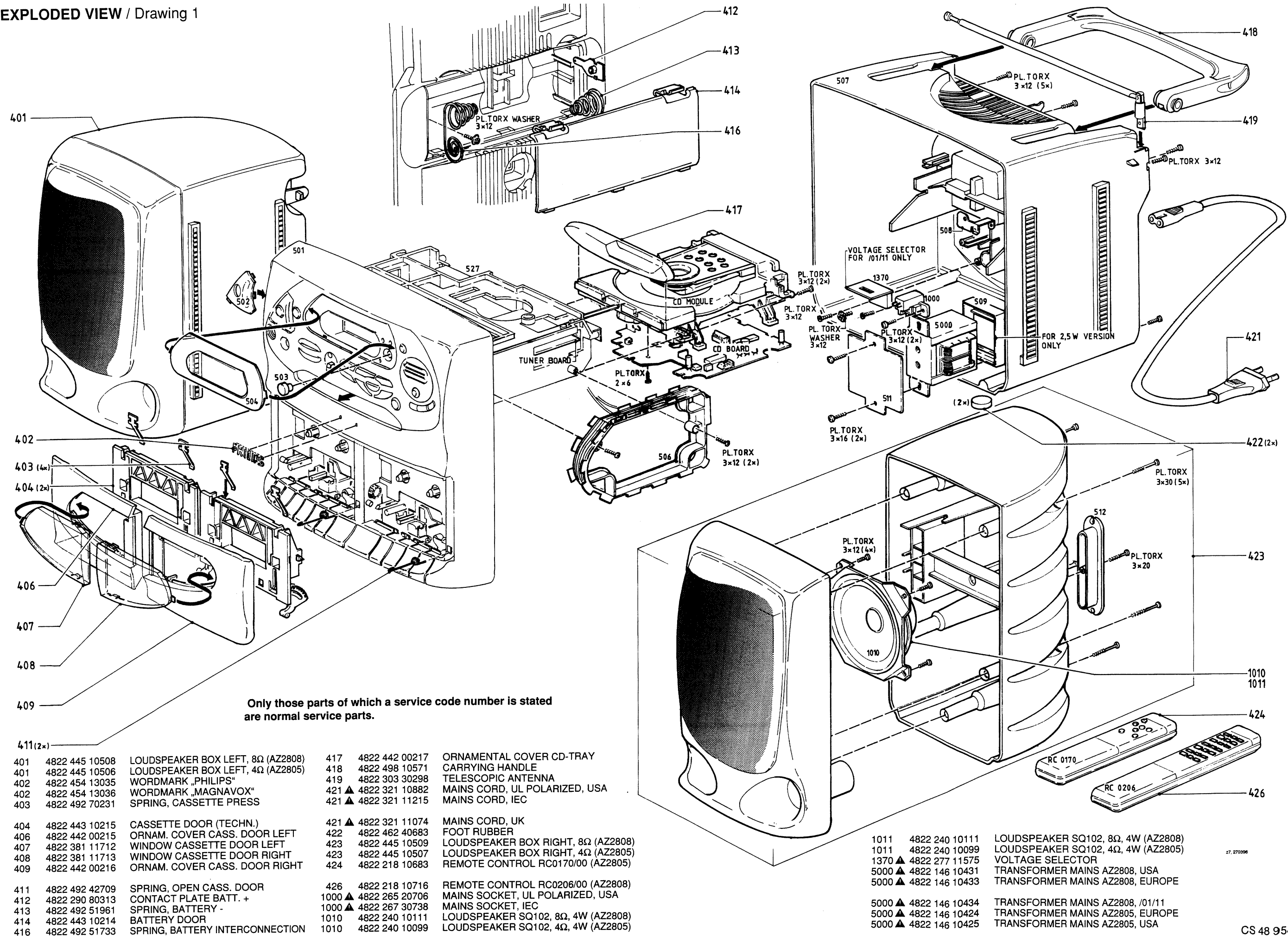
7820 4822 130 41344 BC337-40
7872 4822 130 44196 BC548C
7877 4822 130 44196 BC548C
7878 4822 130 44196 BC548C

INTEGRATED CIRCUITS

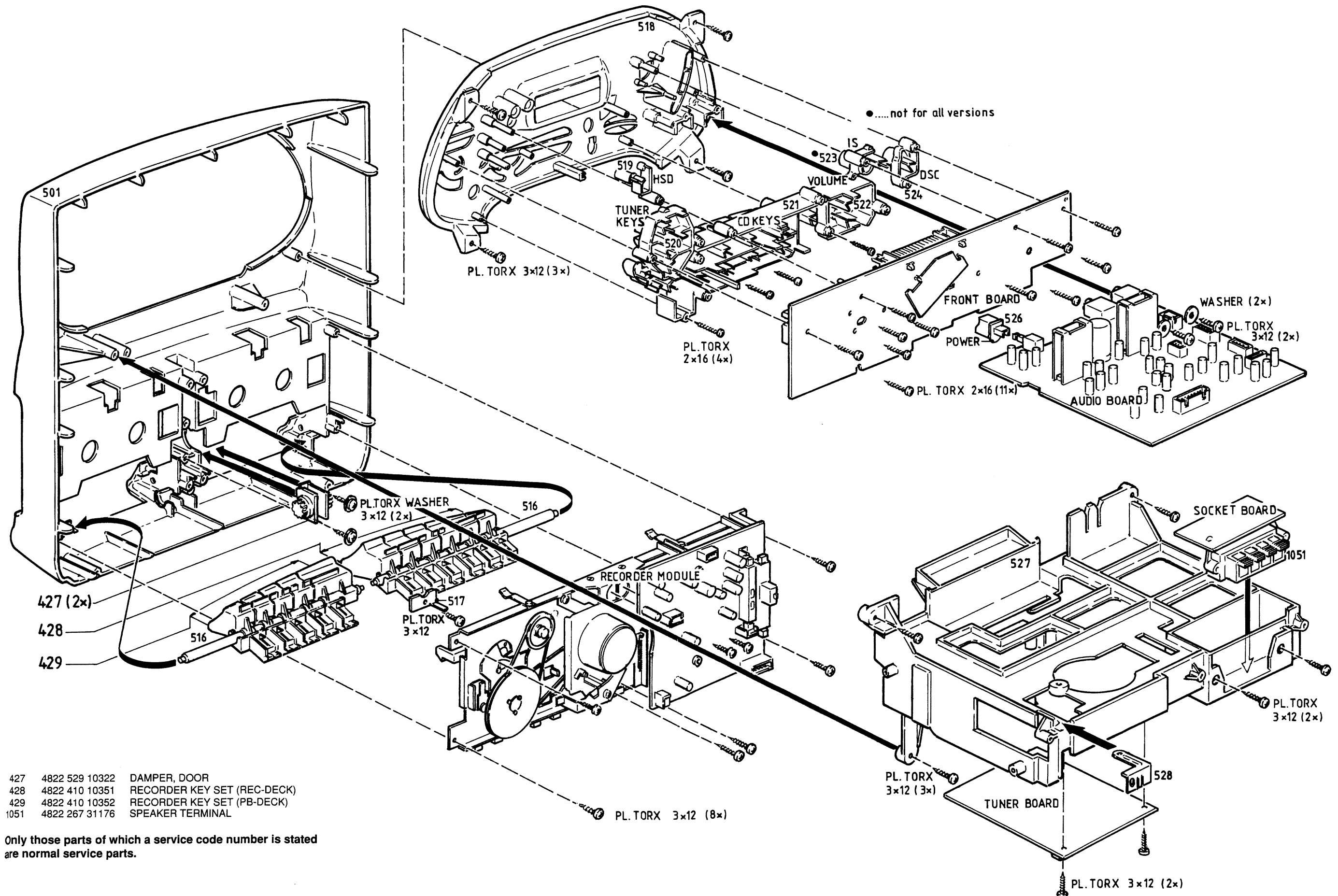
7800 © 5322 209 11517 PC74HCU04T (6-fold Inverter)
7850 © 4822 209 31064 TDA1301T/N1, DSIC2
7851 4822 209 32852 TDA7073A/N2, MOTOR DRIVER
7852 4822 209 32852 TDA7073A/N2, MOTOR DRIVER
7855 4822 209 31519 TDA7072A, MOTOR DRIVER

7860 © 4822 209 90618 SAA7345GP/S5, DECODER
7871 4822 209 32421 TDA1311A/N2, DAC

EXPLODED VIEW / Drawing 1



EXPLODED VIEW / Drawing 2



ELECTRICAL PARTSLIST

FRONT BOARD

MISCELLANEOUS

1400	4822 276 13587	SWITCH TACT
1401	4822 276 13587	SWITCH TACT
1402	4822 276 13587	SWITCH TACT
1403	4822 276 13587	SWITCH TACT
1404	4822 276 13587	SWITCH TACT
1405	4822 276 13587	SWITCH TACT
1406	4822 276 13587	SWITCH TACT
1407	4822 276 13587	SWITCH TACT
1408	4822 276 13587	SWITCH TACT
1409	4822 276 13587	SWITCH TACT
1410	4822 276 13587	SWITCH TACT
1411	4822 276 13587	SWITCH TACT
1412	4822 276 13587	SWITCH TACT
1413	4822 276 13587	SWITCH TACT
1414	4822 276 13587	SWITCH TACT
1415	4822 276 13587	SWITCH TACT
1416	4822 276 13587	SWITCH TACT
1417	4822 276 13587	SWITCH TACT
1418	4822 276 13587	SWITCH TACT
1419	4822 276 13587	SWITCH TACT
1420	4822 135 00035	LCD, LPH6352-1
7450	4822 130 10165	GP1U28XP, INFRARED EYE

CAPACITORS

2401	4822 124 11563	4,7μF	20%	6,3V
2402	4822 126 12882	100nF	20%	50V
2415	5322 122 34123	1nF	10%	50V
2421	5322 122 32531	100pF	5%	50V
2450	4822 124 40246	4,7μF	20%	63V
2460	4822 121 51387	10nF	20%	16V
2461	4822 121 51387	10nF	20%	16V
2468	4822 122 33195	100pF	10%	50V
2475	4822 121 51387	10nF	20%	16V
2480	4822 122 33496	100nF	10%	63V

RESISTORS

3301	4822 051 20689	68Ω	5%	0,1W
3302	4822 051 20689	68Ω	5%	0,1W
3400	4822 116 52191	33Ω	5%	0,5W
3401	4822 117 11449	2,2kΩ	1%	0,1W
3402	4822 051 10102	1kΩ	2%	0,25W
3403	4822 117 11449	2,2kΩ	1%	0,1W
3404	4822 117 11449	2,2kΩ	1%	0,1W
3405	4822 117 11449	2,2kΩ	1%	0,1W
3406	4822 117 11449	2,2kΩ	1%	0,1W
3407	4822 117 11449	2,2kΩ	1%	0,1W
3408	4822 117 10833	10kΩ	1%	0,1W
3409	4822 117 10833	10kΩ	1%	0,1W
3410	4822 117 10833	10kΩ	1%	0,1W
3411	4822 117 10833	10kΩ	1%	0,1W
3412	4822 116 52284	47kΩ	5%	0,5W
3413	4822 117 10833	10kΩ	1%	0,1W
3414	4822 117 10833	10kΩ	1%	0,1W
3415	4822 117 11449	2,2kΩ	1%	0,1W
3416	4822 116 52213	180Ω	5%	0,5W
3417	4822 117 11449	2,2kΩ	1%	0,1W
3418	4822 116 83864	10kΩ	5%	0,5W
3419	4822 117 11449	2,2kΩ	1%	0,1W
3421	4822 116 52271	33kΩ	5%	0,16W
3422	4822 117 11449	2,2kΩ	1%	0,1W
3423	4822 117 10833	10kΩ	1%	0,1W
3424	4822 116 52271	33kΩ	5%	0,16W
3425	4822 051 20339	33Ω	5%	0,1W
3426	4822 051 20479	47Ω	5%	0,1W

RESISTORS

3427	4822 051 20332	3,3kΩ	5%	0,1W
3428	4822 051 20332	3,3kΩ	5%	0,1W
3429	4822 117 11449	2,2kΩ	1%	0,1W
3430	4822 117 11139	1,5kΩ	1%	0,1W
3431	4822 051 10102	1kΩ	2%	0,25W
3432	4822 117 11449	2,2kΩ	1%	0,1W
3433	4822 117 11449	2,2kΩ	1%	0,1W
3434	4822 117 11449	2,2kΩ	1%	0,1W
3441	4822 051 20333	33kΩ	5%	0,1W
3442	4822 051 20473	47kΩ	5%	0,1W
3443	4822 051 20181	180Ω	5%	0,1W
3445	4822 051 20333	33kΩ	5%	0,1W
3446	4822 051 20104	100kΩ	5%	0,1W
3447	4822 051 20333	33kΩ	5%	0,1W
3449	4822 117 11449	2,2kΩ	1%	0,1W
3450	4822 116 52217	270Ω	5%	0,5W
3451	4822 116 52256	2,2kΩ	5%	0,16W
3452	4822 117 10833	10kΩ	1%	0,1W
3453	4822 050 11002	1kΩ	5%	0,2W
3458	4822 051 20223	22kΩ	5%	0,1W
3459	4822 117 11139	1,5kΩ	1%	0,1W
3460	4822 117 11449	2,2kΩ	1%	0,1W
3461	4822 116 52284	47kΩ	5%	0,5W
3462	4822 117 11449	2,2kΩ	1%	0,1W
3463	4822 116 52284	47kΩ	5%	0,5W
3464	4822 117 11449	2,2kΩ	1%	0,1W
3465	4822 116 52284	47kΩ	5%	0,5W
3466	4822 116 83872	220Ω	5%	0,5W
3472	4822 051 20471	470Ω	5%	0,1W
3473	4822 051 20471	470Ω	5%	0,1W
3474	4822 051 20471	470Ω	5%	0,1W
3475	4822 117 11449	2,2kΩ	1%	0,1W
3478	4822 051 10102	1kΩ	2%	0,25W
3479	4822 117 11449	2,2kΩ	1%	0,1W
3480	4822 051 20473	47kΩ	5%	0,1W
3481	4822 051 20473	47kΩ	5%	0,1W
3482	4822 117 11449	2,2kΩ	1%	0,1W
3483	4822 117 11449	2,2kΩ	1%	0,1W
3484	4822 116 52271	33kΩ	5%	0,16W
3485	4822 051 20333	33kΩ	5%	0,1W
3486	4822 116 52271	33kΩ	5%	0,16W
3487	4822 116 52271	33kΩ	5%	0,16W
3488	4822 116 52271	33kΩ	5%	0,16W
3489	4822 117 10833	10kΩ	1%	0,1W
3490	4822 116 52283	4,7kΩ	5%	0,5W
3491	4822 116 83864	10kΩ	5%	0,5W
3492	4822 117 10833	10kΩ	1%	0,1W
3493	4822 117 11449	2,2kΩ	1%	0,1W
3494	4822 051 10102	1kΩ	2%	0,25W
3495	4822 117 11449	2,2kΩ	1%	0,1W
3496	4822 050 11002	1kΩ	5%	0,2W
3497	4822 117 10833	10kΩ	1%	0,1W
3499	4822 117 11449	2,2kΩ	1%	0,1W
4401	4822 051 10008	CHIP JUMPER	1206	

COILS

5401	4822 242 73769	CER. RESONATOR 4,19MHz
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DIODES

6301	4822 135 00019	LTL-16KAE, LED BACKLIGHT DISPLAY
6302	4822 135 00019	LTL-16KAE, LED BACKLIGHT DISPLAY
6303	4822 135 00019	LTL-16KAE, LED BACKLIGHT DISPLAY
6304	4822 135 00019	LTL-16KAE, LED BACKLIGHT DISPLAY
6400	4822 130 31554	BZX79-F4V3

ELECTRICAL PARTSLIST

12-2

FRONT BOARD

DIODES

6401	4822 130 30621	1N4148
6402	4822 130 30621	1N4148
6416	4822 130 10418	LTL16KGE, LED 'IS'
6460	4822 130 10418	LTL16KGE, LED 'JAZZ'
6461	4822 130 10418	LTL16KGE, LED 'DBB'

6462	4822 130 10418	LTL16KGE, LED 'POP'
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TRANSISTORS

7402©	5322 130 41982	BC848B
7403©	5322 130 41982	BC848B
7404©	5322 130 41982	BC848B
7405©	5322 130 41982	BC848B
7406©	5322 130 41983	BC858B

7416©	5322 130 41982	BC848B
7460©	5322 130 41983	BC858B
7461©	5322 130 41983	BC858B
7462©	5322 130 41983	BC858B

INTEGRATED CIRCUITS

7400©	4822 209 13155	TMP87CK20AF-JWLDV83251, μ P
7480©	4822 209 13156	ST24C01M6, EEPROM

TUNER BOARD (ECO 5 PA)

CAPACITORS

2101©	5322 122 32531	100pF	5%	50V	
2102©	4822 122 33177	10nF	20%	50V	
2103©	5322 122 34123	1nF	10%	50V	
2104	4822 122 33195	100pF	10%	50V	
2106	4822 125 50355	4,2-20pF TRIMCAP.			FMMW/LW version
2106	4822 125 60101	3-11pF TRIMCAP.			not for FMMW/LW version
2107	4822 121 51319	1 μ F	20%	50V	
2108©	5322 122 32531	100pF	5%	50V	FMMW/LW version
2109©	5322 122 32448	10pF	5%	50V	FMMW/LW version
2113©	5322 122 32448	10pF	5%	50V	FMMW/SW version
2114©	4822 122 33177	10nF	20%	50V	FMMW/SW version
2115	4822 125 50355	4,2-20pF TRIMCAP.			FMMW/SW version
2116©	5322 122 34123	1nF	10%	50V	FMMW/SW version
2117©	4822 122 33177	10nF	20%	50V	FMMW/SW version
2118©	5322 122 32269	6,8pF	5%	50V	FMMW/SW version
2119©	4822 122 33891	3,3nF	10%	63V	FMMW/SW version
2120©	4822 126 13689	18pF	1%	63V	FMMW/SW version
2120©	5322 122 31946	27pF	5%	50V	FMMW/LW version
2120©	5322 122 32658	22pF	5%	50V	FM/AM version
2122©	4822 122 33891	3,3nF	10%	63V	FMMW/LW version
2123	4822 121 51254	390pF	1%	400V	FMMW/LW version
2125	4822 121 51381	560pF	1%	400V	
2126©	5322 122 31863	330pF	5%	50V	
2127©	4822 122 32927	220nF	10%	63V	
2128	4822 124 41579	10 μ F	20%	50V	
2129	4822 124 41584	100 μ F	20%	10V	
2130	4822 126 11585	22nF	20%	50V	
2131©	4822 122 33325	470nF	20%	50V	
2132©	4822 122 33325	470nF	20%	50V	
2133	4822 124 40242	1 μ F	20%	63V	
2134©	4822 122 33128	15nF	10%	63V	not for USA
2134©	5322 122 32654	22nF	10%	63V	for USA only
2135	4822 124 40746	0,22 μ F	20%	63V	
2136©	4822 122 33128	15nF	10%	63V	not for USA
2136©	5322 122 32654	22nF	10%	63V	for USA only
2137	4822 124 40746	0,22 μ F	20%	63V	
2138	4822 124 41576	2,2 μ F	20%	50V	
2140	4822 121 51252	470nF	5%	63V	not for FMMW/SW version
2140	4822 121 51319	1 μ F	20%	50V	FMMW/SW version
2141©	4822 122 31947	100nF	20%	50V	
2142©	4822 122 31947	100nF	20%	50V	
2143©	4822 122 32927	220nF	10%	63V	
2144	4822 124 40242	1 μ F	20%	63V	
2145©	4822 122 33575	220pF	5%	50V	
2146©	4822 122 33575	220pF	5%	50V	
2147©	4822 122 33575	220pF	5%	50V	
2148	4822 126 11585	22nF	20%	50V	
2149©	5322 122 32654	22nF	10%	63V	
2150©	4822 122 31947	100nF	20%	50V	
2152©	4822 122 33342	33nF	10%	63V	not for East Europe
2152©	5322 116 80853	560pF	5%	63V	for East Europe only
2153©	4822 122 32139	12pF	5%	63V	for East Europe only
2153©	5322 122 32481	15pF	5%	50V	not for East Europe
2155	4822 125 60101	3-11pF TRIMCAP.			
2156©	4822 122 31947	100nF	20%	50V	FMMW/SW version
2158©	5322 122 32448	10pF	5%	50V	FMMW/LW version
2158©	5322 122 33538	150pF	5%	63V	FMMW/SW version
2159©	5322 122 32448	10pF	5%	50V	FMMW/SW version
2159©	5322 122 32659	33pF	5%	50V	not for FMMW/SW version
2160©	5322 122 32654	22nF	10%	63V	FM/AM version
2161©	4822 122 31947	100nF	20%	50V	FMMW/LW version
2162	4822 122 33195	100pF	10%	50V	FMMW/SW version
2163©	4822 122 31947	100nF	20%	50V	not for FM/AM version
2165©	4822 122 31947	100nF	20%	50V	

ELECTRICAL PARTSLIST

TUNER BOARD (ECO 5 PA)

CAPACITORS

2166 ©	5322 122 34123	1nF	10%	50V
2167 ©	4822 122 32139	12pF	5%	63V

RESISTORS

3101 ©	4822 051 20473	47kΩ	5%	0,1W	not for East Europe for East Europe only
3101 ©	4822 051 20562	5,6kΩ	5%	0,1W	
3102 ©	4822 051 20104	100kΩ	5%	0,1W	
3103 ©	4822 051 20183	18kΩ	5%	0,1W	
3104 ©	4822 051 20181	180Ω	5%	0,1W	

3105	4822 116 83872	220Ω	5%	0,5W	FM/MW/SW version FM/MW/LW version FM/MW/LW version
3106 ©	4822 117 10833	10kΩ	1%	0,1W	
3108 ©	4822 117 11449	2,2kΩ	1%	0,1W	
3109 ©	4822 051 20332	3,3kΩ	5%	0,1W	
3110	4822 116 52195	47Ω	5%	0,5W	

3114 ©	4822 051 20333	33kΩ	5%	0,1W	FM/MW/SW version
3115 ©	4822 051 20221	220Ω	5%	0,1W	FM/MW/SW version
3116 ©	4822 051 20184	180kΩ	5%	0,1W	FM/MW/SW version
3117 ©	4822 051 20822	8,2kΩ	5%	0,1W	FM/MW/SW version
3118 ©	4822 051 20104	100kΩ	5%	0,1W	FM/MW/SW version

3120 ©	4822 117 11449	2,2kΩ	1%	0,1W	FM/MW/SW version
3121 ©	4822 051 20479	47Ω	5%	0,1W	FM/MW/SW version
3122 ©	4822 117 11449	2,2kΩ	1%	0,1W	FM/MW/SW version
3123 ©	4822 051 20472	4,7kΩ	5%	0,1W	FM/MW/LW version
3125 ©	4822 117 10833	10kΩ	1%	0,1W	FM/MW/LW version

3126 ©	4822 117 10833	10kΩ	1%	0,1W	FM/MW/SW version
3127 ©	4822 051 20223	22kΩ	5%	0,1W	FM/MW/SW version
3128 ©	4822 117 11449	2,2kΩ	1%	0,1W	FM/MW/LW version
3132	4822 116 52195	47Ω	5%	0,5W	FM/MW/SW version
3133 ©	4822 117 10833	10kΩ	1%	0,1W	

3134 ©	4822 051 20224	220kΩ	5%	0,1W	FM/MW/SW version FM/MW/LW version
3136 ©	4822 117 11449	2,2kΩ	1%	0,1W	
3137 ©	4822 051 20223	22kΩ	5%	0,1W	
3140 ©	4822 051 20008	CHIP JUMPER 0805			
3140 ©	4822 117 10353	150Ω	5%	0,1W	5120=CDA10.7MG40K 5120=CDA10.7MG61KA

3141 ©	4822 051 20563	56kΩ	5%	0,1W	100kΩ TRIMPOT LIN.
3142	4822 100 11163	100kΩ			
3145 ©	4822 117 11449	2,2kΩ	1%	0,1W	
3146 ©	4822 051 20229	22Ω	5%	0,1W	
3152	4822 116 52224	470Ω	5%	0,5W	

3153 ©	4822 051 20471	470Ω	5%	0,1W	for /01/11 only for East Europe only
3154	4822 116 52206	120Ω	5%	0,5W	
3155 ©	4822 051 20229	22Ω	5%	0,1W	
3156 ©	4822 051 20104	100kΩ	5%	0,1W	
3157	4822 116 52234	100kΩ	5%	0,5W	
3158	4822 116 52224	470Ω	5%	0,5W	
3159	4822 116 52224	470Ω	5%	0,5W	

3160	4822 116 52224	470Ω	5%	0,5W	FM/MW/SW version
3161	4822 116 52224	470Ω	5%	0,5W	
3167 ©	4822 051 20121	120Ω	5%	0,1W	
3168 ©	4822 117 10353	150Ω	5%	0,1W	
3169 ©	4822 051 20154	150kΩ	5%	0,1W	

3170	4822 116 52234	100kΩ	5%	0,5W	not for FM/MW/LW Europe and FM/MW/SW versions
3173	4822 116 52219	330Ω	5%	0,5W	FM/AM version
4101 ©	4822 051 20008	CHIP JUMPER 0805			

4102 ©	4822 051 20008	CHIP JUMPER 0805			FM/AM version
4102 ©	4822 051 20334	330kΩ	5%	0,1W	FM/MW/LW version
4103 ©	4822 051 20008	CHIP JUMPER 0805			not for FM/MW/SW version
4104 ©	4822 051 20008	CHIP JUMPER 0805			
4105 ©	4822 051 20008	CHIP JUMPER 0805			
4106 ©	4822 051 20008	CHIP JUMPER 0805			

4107 ©	4822 051 20008	CHIP JUMPER 0805			FM/MW/SW version
4108 ©	4822 051 20008	CHIP JUMPER 0805			not for FM/MW/SW version
4109 ©	4822 051 20008	CHIP JUMPER 0805			FM/MW/SW version
4110 ©	4822 051 10008	CHIP JUMPER 1206			FM/MW/SW version

4111 ©	4822 051 20008	CHIP JUMPER 0805			
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RESISTORS

4120 ©	4822 051 20008	CHIP JUMPER 0805		
4150 ©	4822 051 10008	CHIP JUMPER 1206		
4151 ©	4822 051 20008	CHIP JUMPER 0805		FM/MW/LW version
4152 ©	4822 051 10008	CHIP JUMPER 1206		

4153 ©	4822 051 10008	CHIP JUMPER 1206		
4154 ©	4822 051 10008	CHIP JUMPER 1206		
4155 ©	4822 051 10008	CHIP JUMPER 1206		FM/MW/LW version
4156 ©	4822 051 20008	CHIP JUMPER 0805		FM/MW/LW version
4157 ©	4822 051 10008	CHIP JUMPER 1206		

4158 ©	4822 051 10008	CHIP JUMPER 1206		
4159 ©	4822 051 10008	CHIP JUMPER 1206		
4163 ©	4822 051 20008	CHIP JUMPER 0805		layout stage .7 onwards

COILS

5102	4822 157 71634	RF-COIL MW		
5103	4822 157 71635	RF-COIL LW		
5104	4822 157 71128	RF-COIL SW		
5105	4822 157 71129	RF-COIL SW		
5106	4822 157 53302	1μH		FM/MW/SW version

5109	4822 242 70665	CER. FILTER 10,7MHZ		
5110	4822 242 70665	CER. FILTER 10,7MHZ		
5111	4822 158 60511	AM-IF FILTER 450kHz		
5112	4822 157 70302	AM-IF FILTER 450kHz		
5114	4822 157 70302	AM-IF FILTER 450kHz (AM AFC)		

5120	4822 242 10251	CER. DISCRIMINATOR 10.7MG61KA-TF21		
5120	4822 242 82065	CER. DISCRIMINATOR 10.7MG40K		
5121	4822 242 10261	QUARTZ 75kHz		
5122	4822 157 60517	OSC. COIL LW		
5123	4822 157 60517	OSC. COIL MW		

5124	4822 157 71127	OSC. COIL SW		
5126	4822 157 52333	100μH		FM/MW/SW version
5127	4822 157 62552	2,2μH		FM/MW/SW version
5130	4822 156 30947	RF COIL 1,5 TURNS		
5131	4822 156 30947	RF COIL 1,5 TURNS		

DIODES

6102	4822 130 32214	BA484		FM/MW/SW version
6103	4822 130 30621	1N4148		
6104	4822 130 30621	1N4148		
6105 ©	4822 130 83075	HN1V02H		not for FM/MW/SW version
6106	4822 130 30621	1N4148		FM/MW/SW version

6107	4822 130 34488	BZX79-C11		
6109	4822 130 30621	1N4148		FM/MW/SW version
6110 ©	4822 130 83145	HN2V02H-B		FM/MW/SW version
6120	4822 130 30621	1N4148		not for /01/11
6130 ©	4822 130 82833	1SV228		

6131 ©	4822 130 82833	1SV228		
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TRANSISTORS

7102	4822 130 60093	2SA838B		
7104	5322 130 44779	BC338-40		FM/MW/LW version
7105	5322 130 44779	BC338-40		FM/MW/LW version
7106 ©	5322 130 42136	BC848C		FM/MW/SW version
7107	4822 130 60093	2SA838B		FM/MW/SW version

7109 ©	5322 130 41983	BC858B		not for FM/AM version
7111 ©	5322 130 42136	BC848C		not for FM/MW/LW version Europe
7120 ©	5322 130 42136	BC848C		FM/MW/SW version
7121 ©	5322 130 42136	BC848C		FM/MW/SW version
7122 ©	5322 130 42136	BC848C		FM/MW/LW version

7123 ©	5322 130 42136	BC848C		FM/MW/SW version
7124 ©	5322 130 42136	BC848C		FM/MW/LW version

INTEGRATED CIRCUITS

7101 ©	4822 209 90924	TEA5757H/V1, RADIO IC		
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ELECTRICAL PARTSLIST

AUDIO BOARD

MISCELLANEOUS

1051	4822 267 31176	SPEAKER TERMINAL		
1260	4822 276 13483	SWITCH PUSH, POWER		
1268	4822 253 50137	▲ FUSE T 2,5A UL	for AZ2805/17 only	
1268	4822 071 52002	▲ FUSE T 2A IEC	for AZ2805	
1268	4822 071 52502	▲ FUSE T 2,5A IEC	for AZ2808	

1268	4822 252 51121	▲ FUSE 3,15A UL	for AZ2808/17 only	
1270	4822 265 10489	SOCKET MICRO 3,5MM JACK		
1330	4822 267 31468	SOCKET HEADPH. 3,5MM JACK		

CAPACITORS

2250	4822 124 40746	0,22μF	20%	63V	
2251	4822 124 40746	0,22μF	20%	63V	
2252	4822 124 40784	3300μF	20%	16V	for AZ2805 only
2252	4822 124 41458	4700μF	20%	16V	for AZ2808 only
2254	4822 126 11585	22nF	20%	50V	

2255	4822 124 40433	47μF	20%	25V	
2257	4822 122 33197	1nF	10%	50V	
2270	4822 124 40746	0,22μF	20%	63V	
2271	4822 124 40746	0,22μF	20%	63V	
2274	4822 122 33197	1nF	10%	50V	

2275	4822 122 33197	1nF	10%	50V	
2276	4822 121 41857	10nF	5%	250V	
2277	4822 121 41857	10nF	5%	250V	
2278	4822 121 41856	22nF	5%	250V	
2279	4822 121 41856	22nF	5%	250V	

2280	4822 124 40246	4,7μF	20%	63V	
2281	4822 124 40246	4,7μF	20%	63V	
2282	4822 126 12339	2,2nF	10%	16V	
2283	4822 126 12339	2,2nF	10%	16V	
2284	4822 124 40242	1μF	20%	63V	

2285	4822 122 33197	1nF	10%	50V	
2286	4822 124 41576	2,2μF	20%	50V	
2287	4822 124 40433	47μF	20%	25V	
2288	4822 124 40246	4,7μF	20%	63V	
2289	4822 124 40246	4,7μF	20%	63V	

2292	4822 126 11585	22nF	20%	50V	
2293	4822 126 11585	22nF	20%	50V	
2301	4822 124 41579	10μF	20%	50V	
2302	4822 124 40433	47μF	20%	25V	
2303	4822 124 40242	1μF	20%	63V	

2304	4822 124 40242	1μF	20%	63V	
2305	4822 124 41584	100μF	20%	10V	
2306	4822 124 41584	100μF	20%	10V	
2307	4822 122 33197	1nF	10%	50V	
2308	4822 122 33197	1nF	10%	50V	

2310	4822 124 40196	220μF	20%	16V	
2313	4822 122 33197	1nF	10%	50V	
2314	4822 122 33197	1nF	10%	50V	
2330	4822 124 40433	47μF	20%	25V	
2331	4822 124 40433	47μF	20%	25V	for AZ2805 only

2332	4822 126 12882	100nF	20%	50V	
2333	4822 126 12882	100nF	20%	50V	
2334	4822 122 33169	680pF	10%	50V	
2335	4822 122 33169	680pF	10%	50V	for AZ2805 only
2336	4822 124 41596	22μF	20%	50V	for AZ2808 only

2337	4822 124 40433	47μF	20%	25V	
2340	4822 124 40433	47μF	20%	25V	
2341	4822 124 40433	47μF	20%	25V	
2342	4822 124 41407	0,47μF	20%	63V	
2343	4822 124 41407	0,47μF	20%	63V	

2344	4822 124 41997	470μF	20%	10V	for AZ2805 only
2345	4822 124 41997	470μF	20%	10V	for AZ2805 only
2349	4822 124 40433	47μF	20%	25V	for AZ2808 only
2350	4822 124 41596	22μF	20%	50V	for AZ2808 only
2351	4822 124 40433	47μF	20%	25V	for AZ2808 only

CAPACITORS

2352	4822 122 33169	680pF	10%	50V	for AZ2808 only
2354	4822 124 40433	47μF	20%	25V	for AZ2808 only
2355	4822 124 40433	47μF	20%	25V	for AZ2808 only
2356	4822 124 41407	0,47μF	20%	63V	for AZ2808 only
2357	4822 124 41407	0,47μF	20%	63V	for AZ2808 only

2361	4822 124 40196	220μF	20%	16V	
2362	4822 124 40433	47μF	20%	25V	
2363	4822 124 40433	47μF	20%	25V	
2380	4822 124 41525	100μF	20%	25V	
2381	4822 124 40746	0,22μF	20%	63V	

2382	4822 122 33195	100pF	10%	50V	
2383	4822 121 51387	10nF	20%	16V	
2384	4822 121 51387	10nF	20%	16V	
2385	4822 121 51387	10nF	20%	16V	
2386	4822 122 33197	1nF	10%	50V	

2387	4822 124 41579	10μF	20%	50V	
2388	4822 124 41579	10μF	20%	50V	
2389	4822 122 33197	1nF	10%	50V	
2390	4822 122 33197	1nF	10%	50V	
2391	4822 124 41596	22μF	20%	50V	

2392	4822 122 33197	1nF	10%	50V	
2393	4822 124 40433	47μF	20%	25V	
2394	4822 124 41525	100μF	20%	25V	
2395	4822 126 12882	100nF	20%	50V	
2396	4822 126 12882	100nF	20%	50V	

2550	4822 121 43856	4,7nF	5%	250V	for AZ2808 only
2551	4822 121 43856	4,7nF	5%	250V	for AZ2808 only
2552	4822 122 10466	220pF	10%		for AZ2808 only
2553	4822 122 10466	220pF	10%		for AZ2808 only
2554	4822 122 33848	47pF	5%	50V	for AZ2808 only

2555	4822 122 33848	47pF	5%	50V	for AZ2808 only
2560	4822 121 51379	82nF	10%	63V	for AZ2808 only
2561	4822 121 51379	82nF	10%	63V	for AZ2808 only
2562	4822 121 41857	10nF	5%	250V	for AZ2808 only
2563	4822 121 41857	10nF	5%	250V	for AZ2808 only

2564	4822 124 40433	47μF	20%	25V	for AZ2808 only
2565	4822 124 40246	4,7μF	20%	63V	for AZ2808 only
2566	4822 124 40246	4,7μF	20%	63V	for AZ2808 only
2567	4822 122 33848	47pF	5%	50V	for AZ2808 only
2568	4822 122 33848	47pF	5%	50V	for AZ2808 only

2569	4822 122 33848	47pF	5%	50V	for AZ2808 only
2570	4822 122 33848	47pF	5%	50V	for AZ2808 only
2571	4822 126 12339	2,2nF	10%	16V	for AZ2808 only
2572	4822 126 12339	2,2nF	10%	16V	for AZ2808 only

RESISTORS

3250	4822 116 52224	470Ω	5%	0,5W	
3251	4822 116 52256	2,2kΩ	5%	0,16W	
3252	4822 116 52256	2,2kΩ	5%	0,16W	
3253	4822 050 18208	8,2Ω	1%	0,4W	
3254	4822 050 18208	8,2Ω	1%	0,4W	

3255	4822 050 18208	8,2Ω	1%	0,4W	
3256	4822 050 11002	1kΩ	5%	0,2W	
3257	4822 116 52219	330Ω	5%	0,5W	
3258	4822 116 52283	4,7kΩ	5%	0,5W	
3259	4822 116 52283	4,7kΩ	5%	0,5W	

3260	4822 116 52256	2,2kΩ	5%	0,16W	
3261	4822 116 52256	2,2kΩ	5%	0,16W	
3267	4822 116 52283	4,7kΩ	5%	0,5W	
3269	4822 116 83864	10kΩ	5%	0,5W	
3270	4822 116 52252	180kΩ	5%	0,5W	

3271	4822 116 52297	68kΩ	5%	0,5W	
3272	4822 116 52297	68kΩ	5%	0,5W	
3273	4822 116 52252	180kΩ	5%	0,5W	

ELECTRICAL PARTSLIST**AUDIO BOARD**

3580	4822 116 83864	10kΩ	5%	0,5W	for AZ2808 only
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RESISTORS

3581	4822 116 83864	10kΩ	5%	0,5W	for AZ2808 only
3582	4822 050 11002	1kΩ	5%	0,2W	for AZ2808 only
3583	4822 050 11002	1kΩ	5%	0,2W	for AZ2808 only
3584	4822 116 52283	4,7kΩ	5%	0,5W	for AZ2808 only
3585	4822 116 52283	4,7kΩ	5%	0,5W	for AZ2808 only
3586	4822 116 52249	1,8kΩ	5%	0,16W	for AZ2808 only
3587	4822 116 52249	1,8kΩ	5%	0,16W	for AZ2808 only
3588	4822 116 52304	82kΩ	5%	0,5W	for AZ2808 only
3589	4822 116 52304	82kΩ	5%	0,5W	for AZ2808 only

COILS

5250	4822 157 62552	2,2μH
5251	4822 157 62552	2,2μH
5252	4822 157 53302	1μH

DIODES

6250	5322 130 30684	▲ 1N4002	for AZ2805 only
6250	5322 130 80686	▲ 1N5392	for AZ2808 only
6251	5322 130 30684	▲ 1N4002	for AZ2805 only
6251	5322 130 80686	▲ 1N5392	for AZ2808 only
6252	5322 130 30684	▲ 1N4002	for AZ2805 only
6252	5322 130 80686	▲ 1N5392	for AZ2808 only
6253	5322 130 30684	▲ 1N4002	for AZ2805 only
6253	5322 130 80686	▲ 1N5392	for AZ2808 only
6254	5322 130 31504	BZX79-F3V3	
6255	4822 130 30621	1N4148	
6256	4822 130 30621	1N4148	
6257	4822 130 30621	1N4148	
6258	4822 130 30621	1N4148	
6259	4822 130 30621	1N4148	
6301	4822 130 30621	1N4148	
6350	4822 130 30621	1N4148	
6351	4822 130 30621	1N4148	
6380	4822 130 30621	1N4148	
6381	4822 130 30621	1N4148	
6382	4822 130 30621	1N4148	
6383	4822 130 34488	BZX79-C11V	
6384	4822 130 30621	1N4148	

TRANSISTORS

7250	5322 130 60068	BC558C
7251	4822 130 44196	BC548C
7252	4822 130 41327	BC327-40
7253	4822 130 41327	BC327-40
7254	4822 130 41327	BC327-40
7255	4822 130 41327	BC327-40
7256	4822 130 41327	BC327-40
7262	4822 130 40937	BC548B
7270	4822 130 44246	BC549C
7271	4822 130 44246	BC549C
7273	4822 130 40937	BC548B
7274	4822 130 44196	BC548C
7275	4822 130 44196	BC548C
7300	4822 130 44196	BC548C
7301©	4822 130 61067	XN1401 (DOUBLE PNP)
7302©	4822 130 61067	XN1401 (DOUBLE PNP)
7360	4822 130 40937	BC548B
7380	4822 130 44197	BC558B
7381	4822 130 44196	BC548C
7382	4822 130 44196	BC548C
7383	4822 130 44196	BC548C
7384	4822 130 41327	BC327-40

INTEGRATED CIRCUITS

7272 ©	4822 209 32919	HEF4952BT	
7330	4822 209 31544	TA8227P, POWER STAGE	
7331	4822 209 31544	TA8227P, POWER STAGE	for AZ2808 only
7550 ©	4822 209 63709	LM324D, 4-FOLD OPAMP.	for AZ2808 only
7551 ©	5322 209 11102	HEF4052BT	for AZ2808 only

ELECTRICAL PARTSLIST

AUDIO BOARD

RESISTORS

3274	4822 116 52244	15kΩ	5%	0,5W
3275	4822 116 52244	15kΩ	5%	0,5W
3276	4822 116 52284	47kΩ	5%	0,5W
3277	4822 116 52284	47kΩ	5%	0,5W
3278	4822 116 52257	22kΩ	5%	0,5W
3279	4822 116 52257	22kΩ	5%	0,5W
3280	4822 116 52239	120kΩ	5%	0,5W
3281	4822 116 52239	120kΩ	5%	0,5W
3282	4822 116 52264	27kΩ	5%	0,5W
3283	4822 116 52264	27kΩ	5%	0,5W
3284	4822 116 83874	220kΩ	5%	0,5W
3285	4822 116 83874	220kΩ	5%	0,5W
3286	4822 116 52224	470Ω	5%	0,5W
3287	4822 116 52224	470Ω	5%	0,5W
3288	4822 116 52256	2,2kΩ	5%	0,16W
3289	4822 116 52256	2,2kΩ	5%	0,16W
3292	4822 116 52224	470Ω	5%	0,5W
3293	4822 116 52257	22kΩ	5%	0,5W
3294	4822 116 52285	470kΩ	5%	0,5W
3295	4822 116 52257	22kΩ	5%	0,5W
3296	4822 116 52224	470Ω	5%	0,5W
3297	4822 116 52234	100kΩ	5%	0,5W
3298	4822 116 52234	100kΩ	5%	0,5W
3299	4822 116 52184	18Ω	5%	0,5W
3300	4822 116 52245	150kΩ	5%	0,16W
3301	4822 116 52234	100kΩ	5%	0,5W
3302	4822 116 52284	47kΩ	5%	0,5W
3303	4822 116 52249	1,8kΩ	5%	0,16W
3304	4822 116 52256	2,2kΩ	5%	0,16W
3305	4822 116 52256	2,2kΩ	5%	0,16W
3306	4822 116 52263	2,7kΩ	5%	0,5W
3307	4822 116 52263	2,7kΩ	5%	0,5W
3308	4822 116 52226	560Ω	5%	0,5W
3310	4822 116 52224	470Ω	5%	0,5W
3311	4822 116 52224	470Ω	5%	0,5W
3312	4822 116 52244	15kΩ	5%	0,5W
3313	4822 116 52244	15kΩ	5%	0,5W
3314	4822 116 52269	3,3kΩ	5%	0,5W
3315	4822 116 52269	3,3kΩ	5%	0,5W
3316	4822 116 83864	10kΩ	5%	0,5W
3317	4822 116 83864	10kΩ	5%	0,5W
3318	4822 052 10478 ▲	4,7Ω	5%	NFR
3320	4822 116 52175	100Ω	5%	0,5W
3321	4822 116 52175	100Ω	5%	0,5W
3322	4822 116 52224	470Ω	5%	0,5W
3323	4822 116 52224	470Ω	5%	0,5W
3326	4822 116 52224	470Ω	5%	0,5W
3327	4822 116 52224	470Ω	5%	0,5W
3328	4822 116 52213	180Ω	5%	0,5W
3330	4822 116 52224	470Ω	5%	0,5W
3331	4822 116 52224	470Ω	5%	0,5W
3332	4822 050 11002	1kΩ	5%	0,2W
3332	4822 116 52206	120Ω	5%	0,5W
3333	4822 116 52206	120Ω	5%	0,5W
3334	4822 052 10109 ▲	10Ω	5%	0,33W
3335	4822 116 52206	120Ω	5%	0,5W
3337	4822 116 83872	220Ω	5%	0,5W
3338	4822 116 83872	220Ω	5%	0,5W
3340	4822 116 52224	470Ω	5%	0,5W
3341	4822 050 11002	1kΩ	5%	0,2W
3342	4822 116 52206	120Ω	5%	0,5W
3344	4822 116 52224	470Ω	5%	0,5W
3345	4822 116 52224	470Ω	5%	0,5W

3346 4822 116 83872 220Ω 5% 0,5W
RESISTORS

3347	4822 116 83872	220Ω	5%	0,5W
3350	4822 116 52271	33kΩ	5%	0,16W
3351	4822 116 52271	33kΩ	5%	0,16W
3354	4822 116 52175	100Ω	5%	0,5W
3355	4822 116 52175	100Ω	5%	0,5W
3356	4822 116 52271	33kΩ	5%	0,16W
3357	4822 116 52271	33kΩ	5%	0,16W
3358	4822 116 52244	15kΩ	5%	0,5W
3359	4822 116 52244	15kΩ	5%	0,5W
3360	4822 116 52284	47kΩ	5%	0,5W
3361	4822 116 52257	22kΩ	5%	0,5W
3362	4822 116 52257	22kΩ	5%	0,5W
3364	4822 116 52291	56kΩ	5%	0,5W
3365	4822 116 52291	56kΩ	5%	0,5W
3380	4822 116 83868	150Ω	5%	0,5W
3381	4822 116 52256	2,2kΩ	5%	0,16W
3382	4822 116 52256	2,2kΩ	5%	0,16W
3383	4822 116 52234	100kΩ	5%	0,5W
3384	4822 116 52235	1MΩ	5%	0,5W
3385	4822 116 52285	470kΩ	5%	0,5W
3386	4822 116 52283	4,7kΩ	5%	0,5W
3387	4822 050 11002	1kΩ	5%	0,2W
3388	4822 116 52257	22kΩ	5%	0,5W
3389	4822 116 83864	10kΩ	5%	0,5W
3390	4822 116 83864	10kΩ	5%	0,5W
3391	4822 116 83864	10kΩ	5%	0,5W
3392	4822 116 83864	10kΩ	5%	0,5W
3393	4822 116 52256	2,2kΩ	5%	0,16W
3394	4822 116 52256	2,2kΩ	5%	0,16W
3395	4822 116 52184	18Ω	5%	0,5W
3396	4822 116 52176	10Ω	5%	0,5W
3397	4822 116 52224	470Ω	5%	0,5W
3398	4822 116 52257	22kΩ	5%	0,5W
3550	4822 116 52234	100kΩ	5%	0,5W
3551	4822 116 52234	100kΩ	5%	0,5W
3552	4822 116 52234	100kΩ	5%	0,5W
3553	4822 116 52234	100kΩ	5%	0,5W
3554	4822 116 83878	270kΩ	5%	0,5W
3555	4822 116 83878	270kΩ	5%	0,5W
3556	4822 116 52234	100kΩ	5%	0,5W
3557	4822 116 52234	100kΩ	5%	0,5W
3558	4822 116 52284	47kΩ	5%	0,5W
3559	4822 116 52284	47kΩ	5%	0,5W
3560	4822 116 52291	56kΩ	5%	0,5W
3561	4822 116 52291	56kΩ	5%	0,5W
3562	4822 116 52234	100kΩ	5%	0,5W
3562	4822 116 52245	150kΩ	5%	0,5W
3563	4822 116 52234	100kΩ	5%	0,5W
3563	4822 116 52245	150kΩ	5%	0,5W
3564	4822 116 52234	100kΩ	5%	0,5W
3565	4822 116 52234	100kΩ	5%	0,5W
3566	4822 116 52283	4,7kΩ	5%	0,5W
3567	4822 116 52283	4,7kΩ	5%	0,5W
3568	4822 116 52284	47kΩ	5%	0,5W
3569	4822 116 52284	47kΩ	5%	0,5W
3570	4822 116 52234	100kΩ	5%	0,5W
3571	4822 116 52234	100kΩ	5%	0,5W
3572	4822 116 52256	2,2kΩ	5%	0,16W
3573	4822 116 52256	2,2kΩ	5%	0,16W
3574	4822 116 52222	390Ω	5%	0,16W
3575	4822 116 52222	390Ω	5%	0,16W
3576	4822 116 52283	4,7kΩ	5%	0,5W
3577	4822 116 52283	4,7kΩ	5%	0,5W

for AZ2805 only
for AZ2805 onlyfor AZ2808 only
for AZ2808 onlyfor AZ2808 only
for AZ2808 only
for AZ2808 only
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for AZ2808 onlyfor AZ2808 only
for AZ2808 only
for AZ2808 only
for AZ2808 only
for AZ2808 onlyfor AZ2808 only
layout stage .5 onwards
for AZ2808 only
layout stage .5 onwards
for AZ2808 onlyfor AZ2808 only
for AZ2808 only
for AZ2805 only
layout stage .4 only
layout stage .4 onlyfor AZ2808 only
for AZ2808 only
for AZ2808 only
for AZ2808 only
for AZ2808 onlyfor AZ2808 only
for AZ2808 only
for AZ2808 only

Service
Service
Service

A97-351

5091

Product Service Group CE Audio

Service Information

Already published Service Informations: **none**

CORRECTIONS TO THE SERVICE MANUAL

FRONT BOARD

- * Correct code number for resistor 3426 is :
3426 47Ω 5% 0,16W 4822 116 52195

MECHANICAL PARTSLIST

- * Correct code number for "mains socket IEC" is:
1000 ▲ 4822 265 20318 mains socket IEC

CHANGES IN COURSE OF PRODUCTION

ECO5 TUNER - BOARD

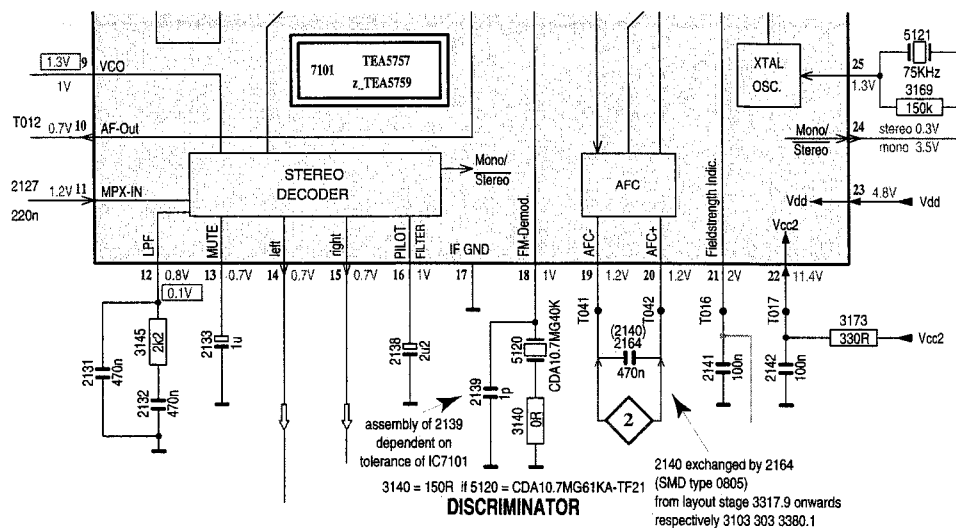
- * To improve locking accuracy after switching FM-mode on when the desired transmitter is disturbed, 3101 was changed to 33k.

3101 © 33k 5% 0,1W 4822 051 20333

- * To improve locking accuracy after search mode, 2139 was added in parallel to discriminator 5120.

2139 © 1pF 20% 50V 5322 122 32447

remark: component was already implemented in the layout. Assembly is dependent on tolerance of IC7101.
see picture 1 next page.



picture 1

* From production week 9703 onwards layout of the printed circuit board has been changed to layout stage 3103 303 3380.1 (The layout stage can be identified by the last digit of the 12-figure number, printed in the copper pattern)
attention: code number 3103 303 **3317.8** of copper pattern exchanged by new code number 3103 303 **3380.1**
→ the change status begins therefore with .1 again.

reason: - IF- buffer-amplifier added (provisional for Japanese version only)

- SMDs type 1206 changed to smaller SMD type 0805

2127 ©	220nF	+80/-20%	50V	4822 126 13473
2131 ©	470nF	+80/-20%	16V	4822 126 13482
2132 ©	470nF	+80/-20%	16V	4822 126 13482
2141 ©	100nF	20%	25V	4822 126 10002
2142 ©	100nF	20%	25V	4822 126 10002
2143 ©	220nF	+80/-20%	50V	4822 126 13473
2161 ©	100nF	20%	25V	4822 126 10002
2163 ©	100nF	20%	25V	4822 126 10002
2165 ©	100nF	20%	25V	4822 126 10002

2140 replaced by 2164 SMD type 0805 (see picture 1)

2164 © 470nF +80/-20% 16V 4822 126 13482

For the new assembly drawing see attached sheet 7-2-1.

(for the Shortwave-version AZ2808/11 use same drawing, but adjustment table of service manual chapter 7-4)

* Adjustment table

Varicap-voltage for 1602kHz was changed to 6,9V±0,5V for FM/MW-versions.

reason: correction

For the new adjustment table see attached sheet 7-2-1 .

RECORDER BOARD

* From production week 9638 onwards 2721 and 2722 have been changed:

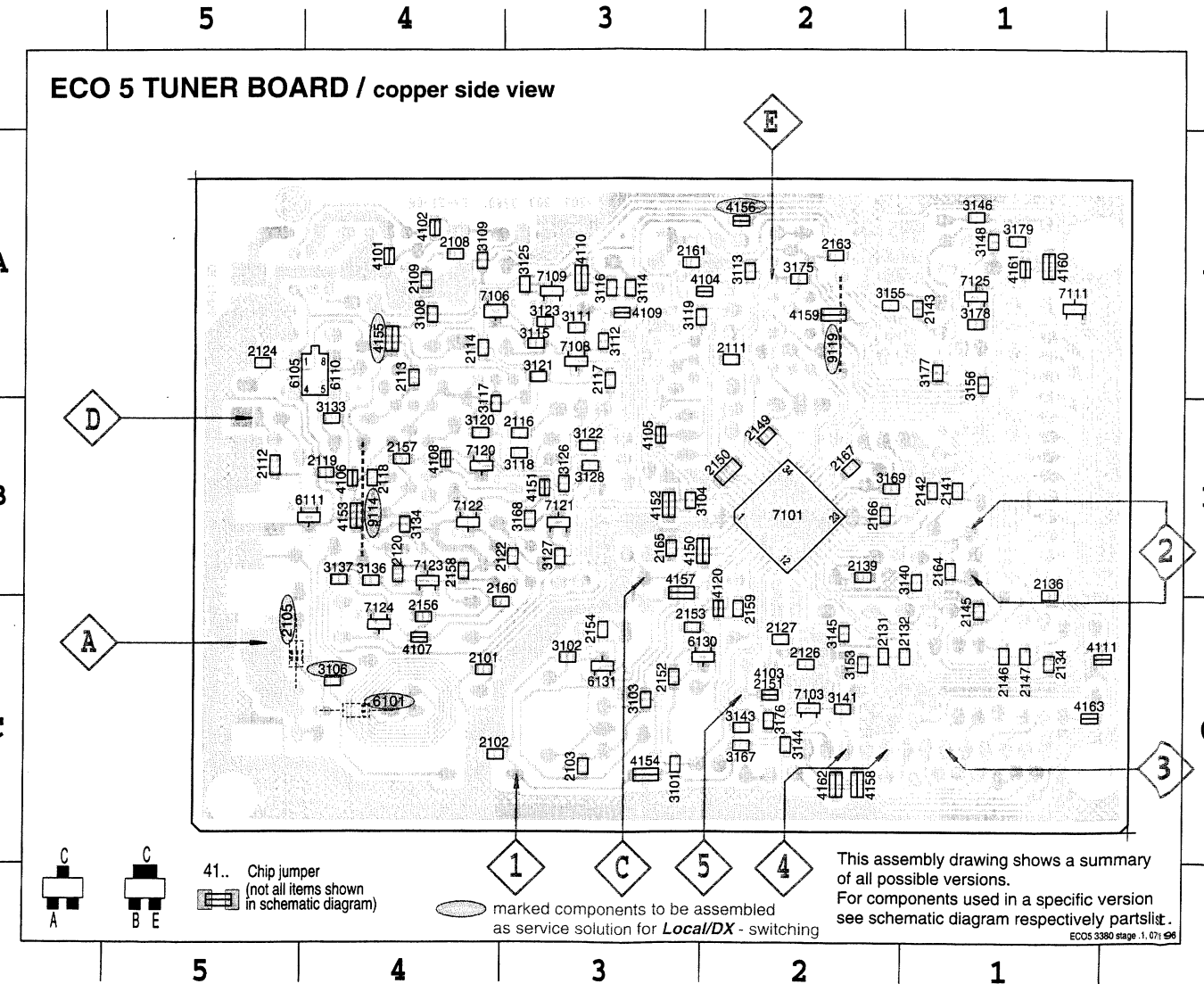
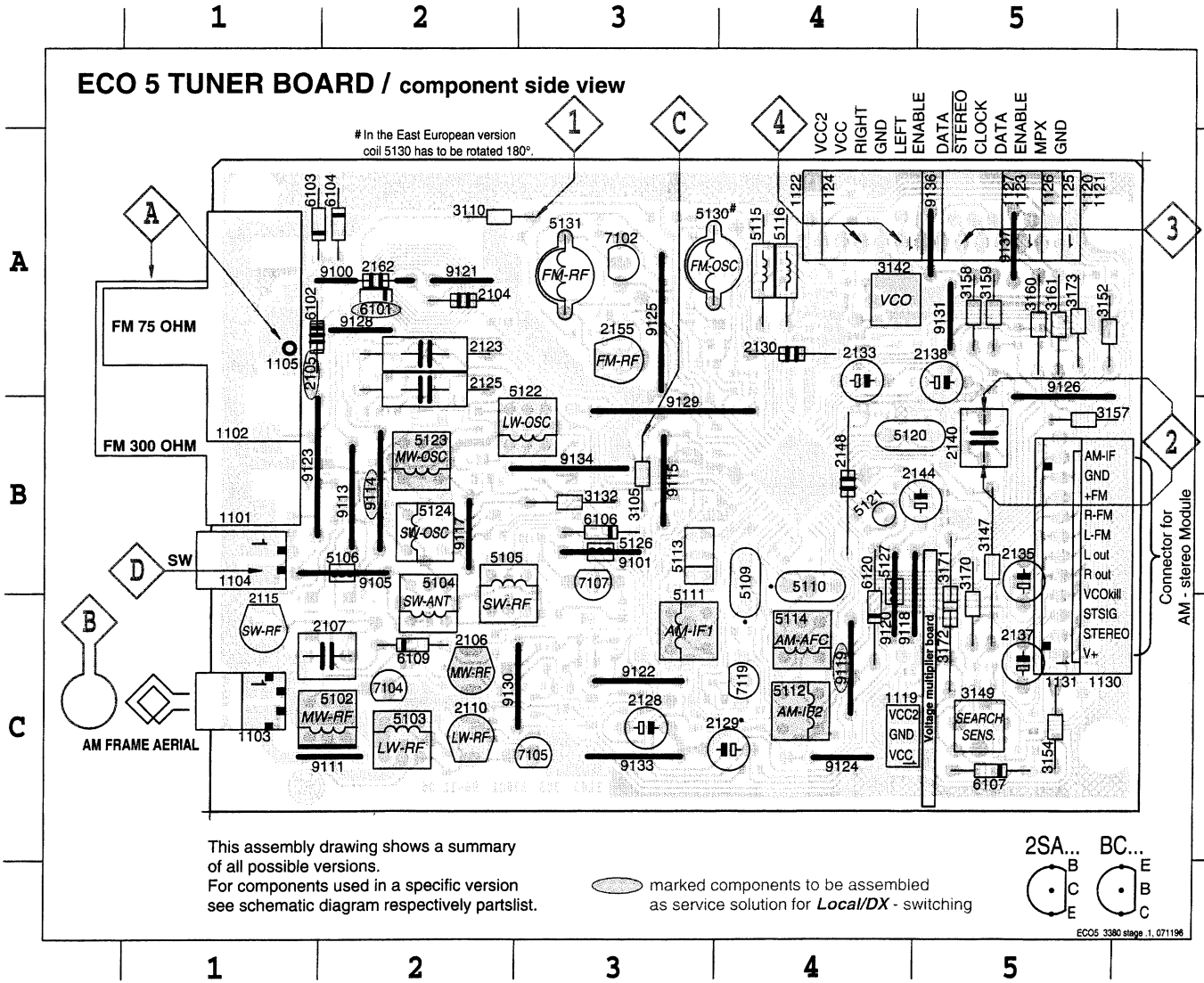
2721 changed to Polcap-type 4822 121 43144 22nF 10% 50V
reason: improvement of bias-modulation at high temperatures.

2722 changed from 3,3nF to 4822 126 11714 4,7nF 20% 50V
reason: increase of bias-amplitude.

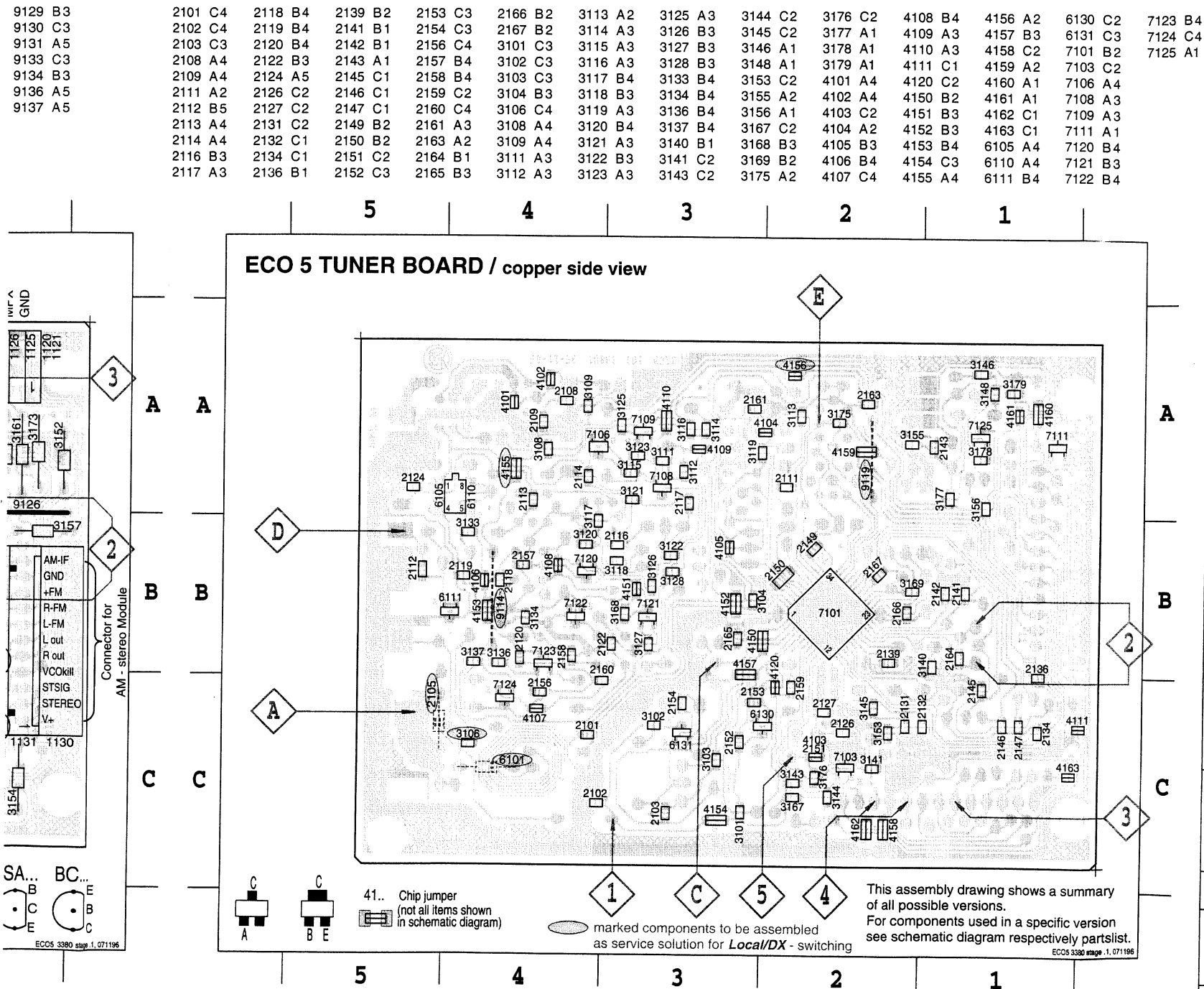
Layout stage 3103 303 3380.1

1101 A1	2106 C2	2137 C5	3147 B5	3172 C5	5113 B3	5130 A3	7104 C2	9117 B2	9129 B3
1102 A1	2107 C2	2138 A5	3149 C5	3173 A5	5114 C4	5131 A3	7105 C3	9118 B4	9130 C3
1103 C1	2110 C2	2140 B5	3152 A5	5102 C2	5115 A4	6101 A2	7107 B3	9119 C4	9131 A5
1104 B1	2115 C1	2144 B5	3154 C5	5103 C2	5116 A4	6102 A1	7119 C4	9120 B4	9133 C3
1105 A1	2123 A2	2148 B4	3157 B5	5104 C2	5120 B4	6103 A1	9100 A2	9121 A2	9134 B3
1119 C5	2125 A2	2155 A3	3158 A5	5105 B2	5121 B4	6104 A2	9101 B3	9122 C3	9136 A5
1120 A5	2128 C3	2162 A2	3159 A5	5106 B2	5122 B3	6106 B3	9105 B2	9123 B1	9137 A5
1130 B5	2129 C4	3105 B3	3160 A5	5109 B4	5123 B2	6107 C5	9111 C2	9124 C4	
1131 B5	2130 A4	3110 A2	3161 A5	5110 B4	5124 B2	6109 C2	9113 B2	9125 A3	
2104 A2	2133 A4	3132 B3	3170 C5	5111 C3	5126 B3	6120 C4	9114 B2	9126 B5	
2105 A1	2135 B5	3142 A4	3171 C5	5112 C4	5127 B4	7102 A3	9115 B3	9128 A2	

2101 C4	2118 B4	2139 B2	2153 C3	2166 B2	3113 A2	3125 A3	3144 C2	3176 C2	4108 B4	4156 A2	6130 C2	7123 B4
2102 C4	2119 B4	2141 B1	2154 C3	2167 B2	3114 A3	3126 B3	3145 C2	3177 A1	4109 A3	4157 B3	6131 C3	7124 C4
2103 C3	2120 B4	2142 B1	2156 C4	3101 C3	3115 A3	3127 B3	3146 A1	3178 A1	4110 A3	4158 C2	7101 B2	7125 A1
2108 A4	2122 B3	2143 A1	2157 B4	3102 C3	3116 A3	3128 B3	3148 A1	3179 A1	4111 C1	4159 A2	7103 C2	
2109 A4	2124 A5	2145 C1	2158 B4	3103 C3	3117 B4	3133 B4	3153 C2	4101 A4	4120 C2	4160 A1	7106 A4	
2111 A2	2126 C2	2146 C1	2159 C2	3104 B3	3118 B3	3134 B4	3155 A2	4102 A4	4150 B2	4161 A1	7108 A3	
2112 B5	2127 C2	2147 C1	2160 C4	3106 C4	3119 A3	3136 B4	3156 A1	4103 C2	4151 B3	4162 C1	7109 A3	
2113 A4	2131 C2	2149 B2	2161 A3	3108 A4	3120 B4	3137 B4	3167 C2	4104 A2	4152 B3	4163 C1	7111 A1	
2114 A4	2132 C1	2150 B2	2163 A2	3109 A4	3121 A3	3140 B1	3168 B3	4105 B3	4153 B4	6105 A4	7120 B4	
2116 B3	2134 C1	2151 C2	2164 B1	3111 A3	3122 B3	3141 C2	3169 B2	4106 B4	4154 C3	6110 A4	7121 B3	
2117 A3	2136 B1	2152 C3	2165 B3	3112 A3	3123 A3	3143 C2	3175 A2	4107 C4	4155 A4	6111 B4	7122 B4	



TUN
W
VAR
FM 87 (65.81)
MW FM/AM 530
FM/MW 531
LW 153
MW FM/MW 531
FM 87 (65.81)
VCO
FM
AM IF
MW
AM A MW
AM R
MW 4 FM/MW 531
LW
MW FM/AM 530
Use serv
1) If sens (input
2) RC ne
3) For AM
4) MW h


TUNER ADJUSTMENT TABLE (ECO5 FM/MW- and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	1	8V ±0.2V
MW FM/AM-version, 10kHz grid 530 - 1700kHz			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
	FM/MW-version, 9kHz grid 531 - 1602kHz		1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
LW 153 - 279kHz			1602kHz	5123		6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A	108MHz	2155	4	MAX
	87.5MHz (65.81MHz)	mod=1kHz Δf=±22.5kHz	87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz ¹⁾
AM IF						
MW	450kHz	C	IC 7101 36 100nF 220R	5111	4	
	connect pin 26 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	Δf=±15kHz V _{RF} = 3mV	IC 7101 40 100nF 220R see remark 2)	5112		
AM AFC MW		C		5114	2	0 ± 2 mV DC
AM RF ³⁾						
MW ⁴⁾ FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	B	1494kHz	2106	4	
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz		1500kHz	2106		
	560kHz	Δf = ±30kHz V _{RF} as low as possible	560kHz	5102		

Use service test program. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

1) If sensitivity of frequency counter is too low adjust to max. channel separation
(input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while adjusting the other one.

3) For AM RF adjustments the original frame antenna has to be used !

4) MW has to be aligned before LW.

ECO5, 170996

SURVEY OF CHANGES OF SERVICE MANUAL

4822 725 24963 - AZ2805, AZ2808

Added pages introduced with Service Information A97-351:

Description	Page/Chapter	Reason
ECO5 tuner board	7-2-1	Layout stage 3380.1 added and corrected adjustment table published
Changes	13-1	Survey of changes added

Service
Service
Service

Product Service Group CE Audio

Service Information

Already published Service Information : **A97-351 (4822 725 26013)**
A97-559 (4822 725 25601)

1. New version **AZ2808/10** has been introduced.

For repair information we refer to Service Manual **AZ2808/00** - 4822 725 24983.

AZ2808/10 is identical to the AZ2808/01.

2. From March 1997 onwards (with production code starts from KT029710..), the ECO Short Loader mechanism is built by some parts which are made from different toolings. In order to ensure the mechanism can operate normally, we recommend to repair the mechanism if necessary with following different service parts.

ITEM	SERVICE CODE	ARTICLE DESCRIPTION
202	4822 522 10625	GEAR WHEEL DRAWER
204	4822 528 11155	CAM WHEEL
206	4822 464 10328	CHASSIS
208	4822 528 11153	IDLE WHEEL 1
209	4822 528 11154	IDLE WHEEL 2
214	4822 402 10781	LEVER SWITCH
216	4822 691 10609	DRAWER
221	4822 464 10329	FRAME

(Refer page 10-9 of Service Manual 4822 72524983 for item numbers)

3. During production, following modification is made on the ECO Short Loader mechanism to avoid the mechanism comes off from its position during transportation and being dropped.

Add brackets to the rib at both sides of the Chassis (item 206). Please refer following diagram.
The parts are available via following service codes :

4822 420 10641	BRACKET
4822 502 11473	SCREW M3X8
4822 505 10758	NUT M3

